

AREAS OF CRITICAL STATE CONCERN

DESIGNATION REPORT

MARYLAND DEPARTMENT OF STATE PLANNING

AREAS OF CRITICAL STATE CONCERN:

DESIGNATION REPORT

Tidal Wetlands
Non-Tidal Wetlands
Protection and Enhancement of Rail Services
Special Areas

January 1981

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January 26, 1981

Hon. Harry Hughes
The State House
Annapolis, Maryland 21404

Dear Governor Hughes:

I am pleased to forward to you the initial Areas of Critical State Concern Designation Report. I have designated the areas described in this Report pursuant to Article 88C, Section 2(b)(3) of the Annotated Code. The designations were made on January 9, and became effective with the publication of the January 23, 1981, Maryland Register.

The Report contains a description and map of each designated area, and a discussion of management policy, based on existing powers, for each class of designated areas. An inventory of existing State, local, and Federal powers relevant to the management of each class is also included.

This Report represents the beginning of a continuing Critical Areas Program which will contribute to the improved management of the State's resources. The designated areas have been screened, evaluated, and agreed to by the governmental bodies in whose jurisdiction they occur, and by numerous State agencies. The proper management of these areas is important to the general welfare and prosperity of Maryland and its citizens. The State agencies in partnership with local governments and other interested parties are responsible for managing these areas to assure that the purposes for which they have been designated are achieved.

Very sincerely yours,

Constance Lieder

CL:ELT:LF:fm

ACKNOWLEDGEMENTS

The Department wishes to thank the many State agencies and local government staff members who have contributed to the overall development of this program and more recently to providing the important detailed information necessary to the production of this report. In particular, staff of the Tidewater Administration and Water Resources Administration of the Department of Natural Resources, staff of the State Railroad Administration of the Department of Transportation, and staff of the Division of Local and Regional Development of the Department of Economic and Community Development provided important program and technical support.

CONTENTS

Letter of Transmittal.....	i
Acknowledgements.....	ii
List of Maps.....	vi
List of Tables.....	vii
Summary.....	viii

Chapter One: Tidal Wetlands Designated Areas

I. Definition.....	1-1
II. Management Policy.....	1-3
III. Area Descriptions.....	1-23

Site Number

TN 1. Severn Run Tributaries - Anne Arundel County.....	1-24
TN 2. Jug Bay - Anne Arundel and Prince George's Counties.....	1-32
TN 3. Eagle Hill/Bog - Anne Arundel County.....	1-40
TN 4. South River Headwaters - Anne Arundel County.....	1-44
TN 5. Round Bay Bog - Anne Arundel County.....	1-52
TN 6. Gunpowder Delta Marsh/Day's Cove - Baltimore and Harford Counties.....	1-55
TN 7. Zekiah Swamp - Charles and Prince George's Counties.....	1-61
TN 8. Mattawoman Creek - Charles and Prince George's Counties.....	1-68
TN 9. Big Marsh/Howell Point - Kent County.....	1-74
TN 10. Broad/Henson Creek Marsh - Prince George's County	1-78
TN 11. Piscataway Creek - Prince George's County.....	1-82
TN 12. Chaptico Run - St. Mary's County.....	1-88
TN 13. Killpeck/Trent Hall Creeks - St. Mary's County...	1-92
TN 14. Pocomoke River - Somerset, Wicomico, Worcester Counties.....	1-95
T 15. Sullivan's Cove Marsh - Anne Arundel County.....	1-96
T 16. Deep Pond/Beverly Beach - Anne Arundel County....	1-100
T 17. Black Marsh - Baltimore County.....	1-104
T 18. Bush Creek Marsh - Harford County.....	1-108
T 19. Church Creek Marsh - Harford County.....	1-112
T 20. Otter Point Creek Marsh - Harford County.....	1-116
T 21. Swan Creek Marsh - Harford County.....	1-122

Chapter Two: Non-Tidal Wetlands Designated Areas

I. Definition.....	2-1
II. Management Policy.....	2-3
III. Area Descriptions.....	2-5

Site Number

TN 1. Severn Run Tributaries - Anne Arundel County.....	1-24
TN 2. Jug Bay - Anne Arundel and Prince George's Counties.....	1-32
TN 3. Eagle Hill/Bog - Anne Arundel County.....	1-40
TN 4. South River Headwaters - Anne Arundel County.....	1-44
TN 5. Round Bay Bog - Anne Arundel County.....	1-52

TN 6.	Gunpowder Delta Marsh/Day's Cove - Baltimore and Harford Counties.....	1-55
TN 7.	Zekiah Swamp - Charles and Prince George's Counties.....	1-61
TN 8.	Mattawoman Creek - Charles and Prince George's Counties.....	1-68
TN 9.	Big Marsh/Howell Point - Kent County.....	1-74
TN 10.	Broad/Henson Creek Marsh - Prince George's County.....	1-78
TN 11.	Piscataway Creek - Prince George's County.....	1-82
TN 12.	Chaptico Run - St. Mary's County.....	1-88
TN 13.	Killpeck/Trent Hall Creeks - St. Mary's County...	1-92
TN 14.	Pocomoke River - Somerset, Wicomico, Worcester Counties.....	1-95
N 15.	Fresh Pond/Angel's Bog - Anne Arundel County.....	2-7
N 16.	Battle Creek Cypress Swamp - Calvert County.....	2-11
N 17.	Finzel (Cranberry) Swamp - Garrett County.....	2-15
N 18.	Potomac Shoreline Marshes - Montgomery County....	2-19
N 19.	Suitland Bog - Prince George's County.....	2-27

Chapter Three: Protection and Enhancement of Rail Services
Designated Areas

I.	Definition.....	3-1
II.	Management Policy.....	3-3
III.	Area Descriptions.....	3-11

<u>Site Number</u>		
R 1.	Oxford Secondary - Caroline and Talbot Counties..	3-12
R 2.	Denton Track - Caroline and Talbot Counties.....	3-12
R 3.	Western Maryland-East Subdivision - Carroll and Baltimore Counties.....	3-18
R 4.	Octoraro Secondary - Cecil County.....	3-23
R 5.	Cambridge Secondary - Dorchester and Caroline Counties.....	3-27
R 6.	Preston Industrial - Dorchester and Caroline Counties.....	3-27
R 7.	Vienna Track - Dorchester County.....	3-33
R 8.	Frederick Secondary - Frederick and Carroll Counties.....	3-36
R 9.	Centreville Secondary - Kent and Queen Anne's Counties.....	3-43
R 10.	Chestertown Secondary - Kent County.....	3-43
R 11.	Crisfield Secondary - Somerset County.....	3-48
R 12.	Mardela Track - Wicomico County.....	3-51
R 13.	Pocomoke Secondary - Worcester County.....	3-55
R 14.	Snow Hill Secondary - Worcester County.....	3-59
R 15.	Ocean City Track - Worcester County.....	3-59

Chapter Four: Special Areas

I. Definition.....	4-1
II. Area Descriptions.....	4-2

Site Number

S 1. Pocomoke River - Somerset, Wicomico, Worcester Counties.....	4-3
S 2. Salisbury Paleochannel - Wicomico County.....	4-14

Appendix A: Wetlands Management Programs: Inventory and Description.....	A-1
Appendix B: Protection and Enhancement of Rail Service Programs: Inventory and Description.....	B-1
Appendix C: Wetland Critical Areas: Classification.....	C-1

LIST OF MAPS

1. Designated Critical Areas.....	Back Pocket
2. Designated Tidal Wetlands.....	1-2
3. Severn Run Tributaries - TN 1.....	1-28
4. Jug Bay - TN 2.....	1-36
5. Eagle Hill Bog - TN 3.....	1-43
6. South River Headwaters - TN 4.....	1-48
7. Round Bay Bog - TN 5.....	1-54
8. Gunpowder Delta Marsh/Day's Cove - TN 6.....	1-59
9. Zekiah Swamp - TN 7.....	1-65
10. Mattawoman Creek - TN 8.....	1-71
11. Big Marsh/Howell Point - TN 9.....	1-77
12. Broad/Henson Creek Marsh - TN 10.....	1-81
13. Piscataway Creek - TN 11.....	1-86
14. Chaptico Run - TN 12.....	1-90
15. Killpeck/Trent Hall Creeks - TN 13.....	1-94
16. Sullivan's Cove Marsh - TN 15.....	1-99
17. Deep Pond/Beverly Beach - T 16.....	1-103
18. Black Marsh - T 17.....	1-107
19. Bush Creek Marsh - T 18.....	1-111
20. Church Creek Marsh - T 19.....	1-115
21. Otter Point Creek Marsh - T 20.....	1-120
22. Swan Creek Marsh - T 21.....	1-125
23. Designated Non-Tidal Wetlands.....	2-2
24. Fresh Pond/Angel's Bog - N 15.....	2-10
25. Battle Creek Cypress Swamp - N 16.....	2-14
26. Finzel (Cranberry) Swamp - N 17.....	2-18
27. Potomac Shoreline Marshes - N 18.....	2-24
28. Suitland Bog - N 19.....	2-29
29. Rail Service and Special Areas.....	3-2
30. Oxford Secondary (North) - R 1.....	3-15
31. Oxford Secondary (South) - R 1.....	3-16
32. Denton Track - R 2.....	3-17
33. Western Maryland - East Subdivision (West) - R 3.....	3-21
34. Western Maryland - East Subdivision (East) - R 3.....	3-22
35. Octoraro Secondary - R 4.....	3-26
36. Cambridge Secondary (West) - R 5.....	3-30
37. Cambridge Secondary (East) - R 5.....	3-31
38. Preston Industrial - R 6.....	3-32
39. Vienna Track - R 7.....	3-35
40. Frederick Secondary (North) - R 8.....	3-41
41. Frederick Secondary (South) - R 8.....	3-42
42. Centreville Secondary (South) - R 9.....	3-46
43. Chestertown Secondary and Centreville Secondary (North) - R 9 and R 10.....	3-47
44. Crisfield Secondary - R 11.....	3-50
45. Mardela Track - R 12.....	3-54
46. Pocomoke Secondary - R 13.....	3-58
47. Snow Hill Secondary (North) and Ocean City Track - R 14 & 15..	3-62
48. Snow Hill Secondary (South) - R 14.....	3-63
49. Pocomoke River - S 1 (TN 14).....	4-9
50. Salisbury Paleochannel - S 2.....	4-19

LIST OF TABLES

Table 1 - Management Programs Applicable to Wetlands.....	1-10
Table 2 - Summary of Selected Economic Development Assistance Programs.....	3-8

SUMMARY

The Department of State Planning's enabling legislation, Article 88C, requires designation of Areas of Critical State Concern, after consultation with and in consideration of recommendations submitted by local governments. The legislation also empowers the Department to promulgate guidelines for use by local subdivisions in making critical area recommendations. Guidelines were published in the Maryland Register on January 7, 1976, the product of an extensive, cooperative effort between the Department, other State agencies, local governments and interest groups.

By mid-1977, the Department began to receive locally recommended critical areas. The recommendations were submitted in a staggered manner. It became necessary to amend the guidelines in June of 1978 to extend the review and submittal periods to more realistically reflect the ongoing nature of the critical area process and the individualized attention accorded each jurisdiction. Ultimately, twenty counties, Baltimore City and 12 municipalities submitted critical area recommendations for over 250 individual areas. Many other sites were recommended by State agencies and public interest groups.

In 1979-80, the status and substance of the program were evaluated. Analysis of these recommended areas revealed considerable diversity in the type and number of sites and the proportion of each jurisdiction included in recommendations. Further, it was found that there were interjurisdictional inconsistencies, absence of an overall theme, and no sound, consistent way to manage the areas. Also, a wide range of attitudes concerning the program was revealed: some jurisdictions desired little or no local involvement or State level action; others openly supported the program with a desire for high priority, strong attention at the State level. Some public interest groups had expectations for the program beyond the Department's legal authority to fill.

During the same period, the Coastal Resources Division of the Department of Natural Resources reaffirmed its decision to use the Critical Areas Program to implement the Geographic Areas of Particular Concern Program. The Coastal Resources Division has assisted by providing financial support and preparing a report suggesting which classes and locally recommended areas in the Coastal Zone should be given early consideration for designation.

As a result of the evaluation of the program and the discussion of issues concerning the program during the 1980 Session of the General Assembly, the Department established the following definition of an Area of Critical State Concern:

An Area of Critical State Concern is a specific geographic area of the State which, based on studies of physical, social, economic and governmental conditions and trends, is demonstrated to be so unusual or significant to the State that the Secretary designates it

for special management attention to assure the preservation, conservation, or utilization of its special values. Additionally, the following objectives were established to guide the critical areas program:

1. To designate Areas of Critical State Concern in accordance with the legislative requirements.
2. To use existing techniques to manage the designated Areas of Critical State Concern for the purpose of protecting their values and to improve existing or to recommend new management practices and programs if needed.
3. To establish and efficiently operate a continuing, effective Critical Areas Program involving generic classes and site identification, designation, management and monitoring.

This document contains the first formal designation of Areas of Critical State Concern. These designated areas are within four classes:

1) tidal wetlands, 2) non-tidal wetlands, 3) protection and enhancement of rail service, and 4) special areas. The following sections describe each class and site and their management. While these designations are a milestone in the critical areas program, this is but an initial step. A continuing program is envisioned leading to the designation of additional sites within these and added generic classes.

Critical Areas, designated as part of the State Development Plan are accorded special status and will receive special attention. It is intended that State and local governments should care for these areas and their actions should reflect a major commitment toward these resources and the continuing program. The following efforts will be exerted to gain action consistent with this commitment:

STATE ACTIONS

Department of State Planning

Intervene in administrative, judicial or other proceedings concerning land use, development, or construction in order to gain proper management of critical areas.

Prepare model zoning, subdivision and other regulatory provisions to aid in management of critical areas.

Conduct State clearinghouse project reviews to assure consistency with management and other aspects of critical areas.

Make capital improvements decisions that will avoid, to the extent possible, or mitigate detrimental impacts on critical areas.

Provide technical assistance to State and local agencies to aid in critical area identification and management.

Give high priority in the administration of planning grant assistance programs to substate jurisdictions that will enhance and implement the critical area program.

Evaluate the effectiveness of the critical areas program and should any deficiency be found make needed adjustments to those activities within the purview of the Department and make recommendations including changes in laws, regulations, or administrative procedures.

Other State Agencies

Conduct regulatory and permit activities consistent with the management and other aspects of the designated areas.

Assure agency planning and programming activities include the designated critical areas as a primary factor and the resultant plans and programs are consistent with the areas' delineations and management.

Carry out construction projects, grants, assistance programs and other decision-making responsibilities compatibly with the designated critical areas.

Assist in defining new generic classes and determining the priority to be accorded each class.

Aid in identifying potential critical areas by indicating which sites within generic classes are of major significance.

Provide technical data and information to local agencies for their use in recommending potential critical areas.

LOCAL GOVERNMENT

Adopt designated critical areas as part of local comprehensive and other plans and incorporate them within the overall local planning program of each local jurisdiction.

Assure that zoning, subdivision, growth management and other decisions are consistent with critical area designations and, where required, appropriate plans are amended.

Conduct an annual assessment to ascertain the impact of decisions and actions on the designated areas and include the results in the planning agency's annual report.

Assure that sewer, water, transportation and other facility and utility actions are consistent with the critical areas.

Assist in defining new generic classes and make recommendations of areas within each added class.

REPORT ORGANIZATION

Each chapter discusses one generic management class selected for designation purposes: Chapter One - Tidal Wetlands, Chapter Two - Non-Tidal Wetlands, Chapter Three - Preservation and Enhancement of Rail Service, and Chapter Four - Special Areas. A definition of the generic class, a discussion of overall management policy for that class, and discussion and map of each designated area is included. Appendix A is an inventory and description of the existing management authorities and programs applicable to wetlands. The Appendix is keyed into Table 1 on pages 1-10 to 1-22 of Chapter One. Appendix B is an inventory and description of economic development programs applicable to the Rail Service designations. It is keyed into Table 2 on pages 3-8 to 3-10 of Chapter Three. Appendix C contains a scientific classification of each designated wetland and the State water quality standards that apply to the waters in and around each designated wetland.

Chapter One

TIDAL WETLANDS DESIGNATED AREAS

CHAPTER ONE: TIDAL WETLANDS

DESIGNATED AREAS

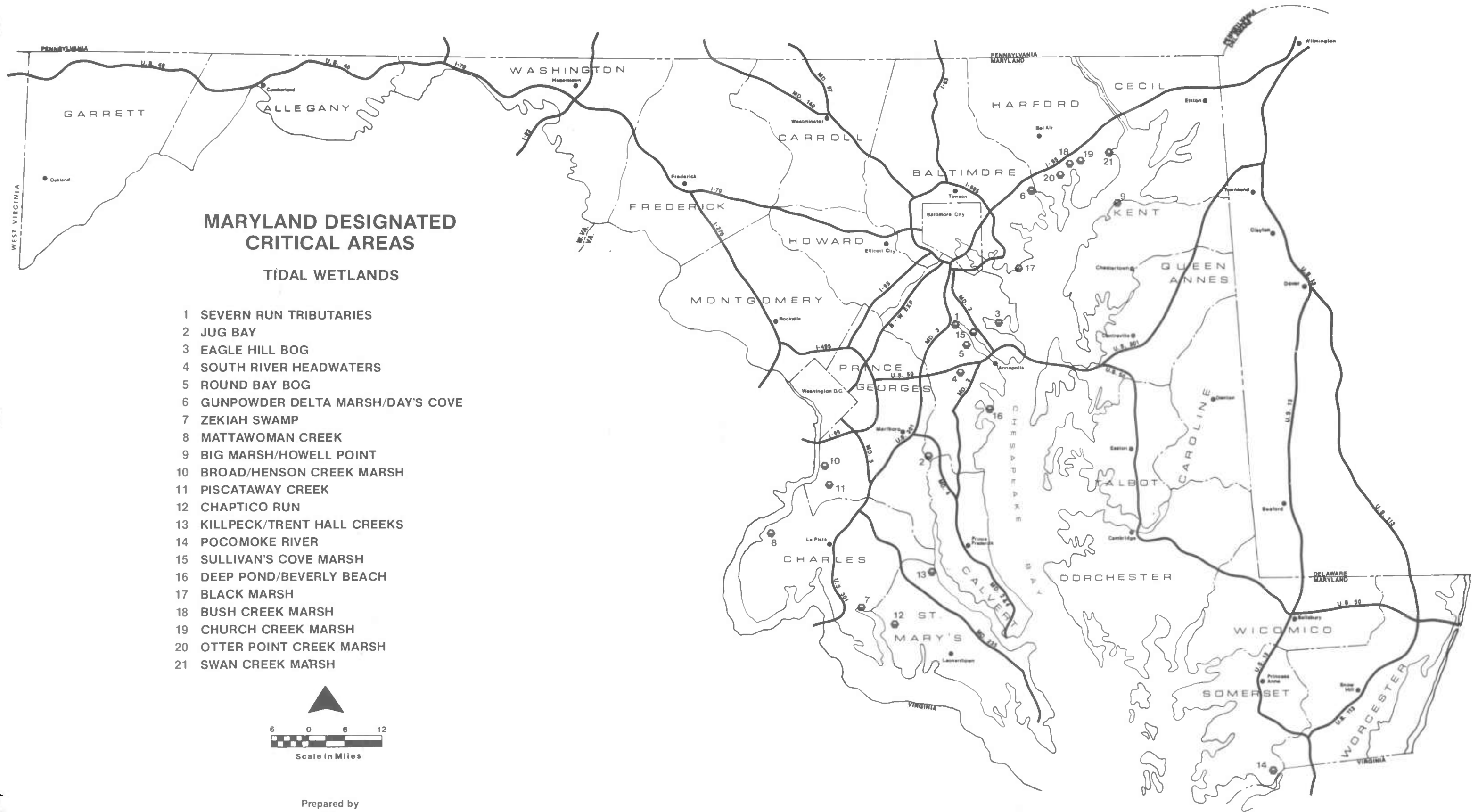
I. DEFINITION

Tidal wetlands are one of the most prominent and ecologically important physical features in Maryland, due to the nearly 4,000 miles of estuarine waterfront on the Chesapeake Bay. These designations represent only a small portion of the wetlands around the Bay and its tributaries. They include a range of wetland types in different areas around the Bay. The map on the following page shows the location of the 21 designated tidal wetlands. The definition of tidal wetlands for purposes of the Critical Areas Program is as follows:

"Tidal Wetlands" are those transitional lands between terrestrial and aquatic systems that are subject to tidal influence. The water table is at or near the surface, or land is covered by water up to approximately two meters deep. These conditions must persist long enough to promote the formation of hydric¹ soils or to support the growth of hydrophytes.² This class includes those wetlands regulated under the State Wetlands Law, Natural Resources Article, Title 9, with the exception of non-vegetated open water, usually greater than two meters deep.

¹Hydric Soils - Soil that is wet long enough to periodically produce anaerobic (no oxygen) conditions, thereby influencing growth of plants.

²Hydrophytes - Moisture loving plants.



II. MANAGEMENT POLICY

The significance of tidal wetlands in Maryland gradually gained recognition during the 1960's culminating in a series of events: enactment of a Joint Resolution in 1967 calling for a State Wetlands Study and Plan; the preparation of that plan, "Wetlands in Maryland", which was the first comprehensive inventory of tidal wetlands and the first comprehensive statewide analysis of the value of these wetlands; and finally, enactment of Maryland's tidal wetlands law in 1970. This law required that a permit be obtained by anyone wishing to alter a tidal wetland. The preamble to the Tidal Wetlands Act states:

"It is declared that in many areas of the State, much of the wetlands have been lost or despoiled by unregulated dredging, dumping, filling, and like activities, and that the remaining wetlands of this State are in jeopardy of being lost or despoiled by these and other activities; that such loss or despoilation will adversely affect, if not entirely eliminate, the value of such wetlands as sources of nutrients to finfish, crustacea and shellfish of significant economic value; that such loss or despoilation will, in most cases, disturb the natural ability of tidal wetlands to reduce flood damage and adversely affect the public health and welfare; that such loss or despoilation will substantially reduce the capacity of such wetlands to absorb silt and will thus result in the increased silting of channels and harbor areas to the detriment of free navigation. Therefore, it is declared to be the public policy of this State, taking into account varying ecological, economic, developmental, recreational, and aesthetic values, to preserve the wetlands and to prevent the despoilation and destruction thereof."*

Since the wetlands law was enacted, the draining or filling of wetlands or conversion of tidal wetlands to other uses has declined to very low levels. However, as the 1970's progressed, it became increasingly apparent that direct alteration of wetlands was not the only major threat to their quantity and quality. It was learned that the health of wetlands is also dependent upon the quality of the adjacent tidal water, the quality of the water in their drainage area, and the amount

*Title 9, Natural Resources Article, Annotated Code of Maryland:
"Wetlands and Riparian Rights."

and characteristics of sediments carried into them from both sources. Each wetland is unique in some way, and there are wide variations in their values and the floral and faunal life systems which they contain and support.

In general, there are two types of physical impacts that can adversely affect wetlands:

1. Direct: Alterations, principally dredging and filling.
2. Indirect: Changes in the physical and chemical properties of the water and sediments draining into a wetland from its natural watershed.

The first type, direct impact, is substantially under control. While physical alterations of wetlands are not prohibited by order of the State Wetlands Act, State and Federal permits are required before alterations can occur. Strong penalties, including remedial or compensatory actions, can be imposed where actions in violation of the law have taken place. However, improvements to the wetlands regulatory program can still be made. There is always a need for more information on the quality and value of individual wetlands and on the cumulative impacts of permitted alterations. Such information helps to improve regulatory decisions. Studies and inventories are continually being carried out under the State's Coastal Zone and Wetlands programs and by some local governments in the course of their planning and zoning activities.

While permits must be considered on a case-by-case basis, consideration of trade-offs in permitting alterations to wetlands should be based on a clear set of policies promulgated by the State and used by local governments in guiding their planning and zoning activities. Existing policies should be continually reviewed in the light of new information and needs. Each applicant, including applicants that are public bodies, should demonstrate clearly that the benefits from alterations or losses of wetlands for a project are clearly in the public interest and that there are

no feasible alternatives. Where alterations are permitted, actions that mitigate impacts and/or replace lost wetlands should be required.

The second type, indirect impact, from the drainage area of wetlands is more difficult to detect and trace to a particular source or cause. Often the impacts of activities in the watershed on wetlands are manifested gradually and insidiously. The demise of submerged aquatic vegetation around the Chesapeake Bay is a case in point. After much of the grass had already disappeared, research efforts were initiated and accelerated to determine the cause. Even after some years of research, the cause is not clear, and most likely there is a combination of causes, possibly relating to agricultural chemical applications, siltation and the occurrence of major storms.

The management implications of this type of impact reach into virtually all activities which take place on the land and contribute to changes in the quality and quantity of surface and ground water. Some aspects of these activities are directly regulated, such as sediment control at construction sites; others are managed through general powers such as local planning or zoning, or through incentives, such as grants to farmers to install erosion control practices; and still others have little or no government control or management such as agricultural herbicide applications or general debris and dirt from dense urban area surfaces. At the present time, this is the most important front on which the battle to protect wetlands must be waged. Significant additions to direct land use regulatory powers is not the answer in most cases. A combination of approaches is needed improving utilization and enforcement of existing authorities: more vigorous enforcement of existing regulatory programs, incorporation of new more sensitive design standards in subdivision regulation, more complete land suitability capability analyses as a basis for local comprehensive planning and zoning, more incentives for land owners and users to do the "right" thing, and more applied research on what the "right" things are.

Since all of the designated wetlands were identified after intensive processes which resulted in their recommendation by local governments, local plans and standards as they apply to the buffer areas, impact areas, and watersheds should be reviewed for their ability to protect the designated wetlands. State agencies with responsibilities for advising, reviewing, or approving of local plans, or for programs which affect these watersheds should also initiate reviews of their standards and practices with regard to these designated areas.

The basic philosophy of this discussion is that wetlands should be protected and preserved. There is little serious debate about the value and importance of wetlands to the well being of the environment, which the human population depends upon for survival. This does not mean that they cannot be used, but that their use should not result in their damage or destruction, or that where it is decided that damage or destruction must occur for good cause, the mitigating measures, including the "construction" of replacement wetlands should be required. Wetlands have many uses: storm protection, pollution control, wildlife habitat, food growing, recreation, and aesthetic enjoyment. Proper conservation and management of wetlands can enhance these positive uses.

Maryland has a broad array of State laws affecting the use of land, water, and intertidal areas that can be administered in a coordinated fashion to properly manage wetlands that have been designated as Areas of Critical State Concern. For example, the State can produce plans for watershed management, it can develop and promulgate criteria and standards, and it can regulate, by permit, activities and uses that may directly or indirectly affect the environmental attributes of wetlands.

Although the State has direct regulatory authority only over tidal wetlands, the State's authority to plan for overall watershed management provides a broad tool for assuring the proper use, conservation, and preservation of all tidal wetlands and most non-tidal wetlands.

Current statutes, regulations, and common law can be administered toward the common goal of properly managing land use activities proposed to occur within, or near, wetlands. These laws also protect wetlands by managing development, water and land uses and activities, and pollution discharge in the total watershed of any particular wetland. The State is authorized to enter into interstate agreements to promote coordinated and cooperative programs that can protect wetlands and also has special management authorities over specific waters and other natural areas that may affect wetlands.

Critical areas management embodies the concept of coordinating State, Federal, and local planning, acquisition, regulation, funding and setting standards in order to achieve the goals and objectives of the Program. The Maryland Environmental Policy Act* provides a basic framework for a coordinated environmental policy that will guide State actions toward the goal of environmental conservation and preservation. However, in order to assure positive, visible results in critical area management, government programs must be administered so as to give due consideration to the meaning of a critical area designation within the decision making processes. This implies a departure from the traditional unilateral decisions of agency permitting programs and a conscious acknowledgement by State agencies that they indeed have a responsibility to consider planning and land use criteria in their decisions affecting designated Areas of Critical State Concern.

In combination, current State laws and programs provide a sound basis upon which to build an effective management system for Areas of Critical State Concern. The State can use its powers to mitigate or prevent adverse impacts that directly alter wetlands, that affect the watersheds of wetlands, and that affect incidental activities which may impact wetlands. Total success in proper wetland management requires continued planning and research to ensure amelioration and prevention of

*Title 1, Natural Resources Article, Annotated Code of Maryland,
"Department of Natural Resources."

long term and cumulative adverse impacts: however, the State is well equipped to effectively protect its important wetlands from the more obvious and eminent impacts resulting from land and water uses and activities.

These few designated wetlands include some of the finest examples of their types. Their designation in no way diminishes the value and importance of other wetlands which have not been designated at this time. The purpose of designation is to focus on a few important wetlands that, properly managed, can set the standard for improved management of all wetlands.

The designated area maps were developed from a variety of sources including maps and information provided by local jurisdictions, maps prepared by the Wildlife Administration, official wetlands maps of the Water Resources Administration, and a variety of State and local studies and inventories. The boundaries and areas on the maps may be approximate, although they were developed from the best available information. The maps show the location of the wetlands in an area and may also show "buffer areas" and "impact areas." These are defined as follows:

Buffer Area - That area immediately adjacent to an area of critical State concern which is vital to the integrity of the area, but does not contain the specific features or characteristics for which the site has been designated. It may be necessary to manage the buffer area, though less intensively than the designated area.

Impact Area - The area where activity and uses, if not properly managed, could have an adverse impact on the designated area or the buffer area.

Buffer areas and impact areas may or may not be shown for any particular critical area, and if shown, they may or may not be included in the designated area. Decisions on these matters depended on the nature of the original recommendations provided by local governments, further consultation with local staffs, and judgements of the Department of State Planning staff.

In summary, the policies and recommendations which should guide the management of these designated areas follow:

1. Policies for issuance of wetlands permits should be reviewed in consideration of comprehensive development planning policies of the State and in consideration of accommodating and respecting natural processes. The primary objective of such policies should be the protection of wetlands from damage and destruction.
2. Local governments' powers form the first line of management for wetlands protection. They should continue to review and improve local planning, zoning, regulatory and management policies, programs and capability to protect wetlands from damage and destruction.
3. State and local governments should continue, consistent with available resources, to:
 - a. Identify and acquire, through direct purchase, easements, or other techniques, the most valuable and/or threatened wetlands.
 - b. Work with private landowners through education and technical assistance, to help them protect the wetland resources they own or impact.
 - c. Utilize Federal resources and programs to the maximum extent possible to achieve the objectives of this program.
4. Continuing study and research should be carried out on the quality and value of individual wetlands, and on the cumulative effect of direct and indirect land use changes on wetlands.

The following table summarizes the programs that are applicable to the management of wetlands. Appendix A provides a more detailed discussion of each of these programs.

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
A. WETLANDS MANAGEMENT										
1. Tidal Wetlands Act	A-1	Definition Policy Regulatory	NR Article Title 9	X		X			X	Parallel review through similar Federal programs- Corps of Engineers Section 10/404 Permit Program
2. Chesapeake Bay Dredging	A-2	Regulatory	NR Article §8-1601	X		X	X			
3. Non-Tidal Wetlands -	See "B" Watershed and Flood Control Management									
B. WATERSHED AND FLOOD CONTROL MANAGEMENT										
1. Waters of the State	A-2	Definition §8-101	NR Article	X	X	X	X			Parallel review through similar Federal programs- Corps of Engineers Section 10/404 Permit Program
2. Waterway Construction and Obstruction Permits	A-2	Policy Regulatory	NR Article §8-803		X	X	X			
3. State Projects	A-2	Regulatory	NR Article §8-905	X	X	X	X			
4. Flood Control and Watershed Management Act and Grant Program	A-3	Policy Planning Regulatory Grant	NR Article §8-9A01	X	X	X	X	X	X	Planning authorities delegable to local government and implementation of plans dependent on local actions. State grants may supplement a Federal project.

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
5. Sediment Control Program	A-3	Regulatory	NR Article §8-1101 et. seq.	X	X	X	X	X		Local government must implement program subject to State review
Patuxent and Severn Rivers Sediment Control	A-3	Regulatory	NR Article §8-1201, 1202, 1208-1211	X	X	X	X	X		
6. Mining Permits										
Deep Coal	A-3	Regulatory	NR Article §7-5A01 et. seq.		X		X			
Surface Coal	A-3	Regulatory	NR Article §7-501 et. seq.		X	X	X			State participation in non-federal share of P.L. 566 Small Watershed projects
Non-Surface Coal	A-3	Regulatory	NR Article §7-6A01 et. seq.	X	X	X	X			
7. Small Watershed Program	A-3	Funding and Acquisition	NR Article §8-903-4	X	X	X	X	X	X	
8. Flood Insurance Program	A-3	Land Management Regulatory	Federal Law	X	X	X	X	X	X	
9. Erosion Control Program	A-3	Planning Loans Technical Assistance	NR Article §8-1001 et. seq.	X		X	X			State overview of local implementation - Federally mandated program

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
C. WATER QUALITY AND WATER SUPPLY MANAGEMENT										
1. County Water and Sewerage Plans	A-4	Planning Regulatory	Article 43 Section 387C	X	X	X	X	X		State approves locally prepared plans
2. Discharge Permits	A-4	Policy Regulatory	NR Article 88-1401 et. seq. 88-1501 et. seq.	X	X	X	X		X	Administration of parallel Federal permit requirement delegated to State
3. Sewerage Construction Grants Program	A-4	Planning Grant	Article 43 Section 387B and individual bond authorizations	X	X	X	X		X	State grants to local governments may supplement parallel Federal grant programs
4. Water Quality Management Planning	A-5	Planning Implementation	Federal Law Article 43 Section 718 et. seq.	X	X	X	X	X	X	State and local government carry out planning mandated and partly funded by Federal Government
5. Community Sewerage, Water and Storm Drain Facilities Construction Permits	A-5	Regulatory	Article 43 Section 394	X	X	X	X			

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
6. Individual Water and Sewer System (Septic Tanks, Wells) and Subdivision Permits	A-5	Policy Regulatory	Article 43 Section 396	X	X	X	X	X		Local Health Offices responsible for issuing and enforcing permits under State rules
7. State Operation of Water and Sewerage Facilities	A-5	Planning Funding Implementation	NR Article Title 3 Subtitle 1	X	X	X	X	X		Local government and private entities may contract with MES for construction and/or operation of their facilities
8. Ground and Surface Water Appropriation Permits and Well Drilling	A-5	Regulatory	NR Article §8-801 et. seq. §8-601 et. seq.	X	X	X	X			
9. Watershed and Flood Control Programs	A-5	SEE ITEM "B" IN THIS TABLE								
10. Oil Handlers Permit and Emergency Response Program	A-6	Regulatory Funding	NR Article §8-1411	X	X	X	X			
11. Sewerage and Water Treatment Plant Operators Training and Certification and Sanitarian Training	A-6	Regulatory	Article 43 Sections 406A, 723, 725 et. seq.	X	X		X			

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
12. Watercraft and Marina Pollution Control	A-6	Regulatory	Article 43 Section 721	X	X	X	X			
13. General Health Powers	A-6	Regulatory	Article 43 Section 2	X	X	X				
D. SOLID AND HAZARDOUS WASTE MANAGEMENT										
1. County Solid Waste Plans	A-6	Planning Regulatory	Article 43 Section 3870	X	X	X	X	X		State approves locally prepared plans
2. State Solid Waste Plan	A-6	Planning	Federal Law	X	X		X		X	Federally mandated State plans
3. Designated Hazardous Substances Program	A-6	Policy Regulatory	NR Article 88-1413.2 et. seq. Article 43 Section 809 et. seq.	X	X		X			
4. Hazardous Waste Facilities Siting Program	A-7	Planning Implementation	NR Article 83-701 et. seq.	X	X	X	X	X		Local government must be consulted
5. Northeast Maryland Waste Disposal Authority	A-7	Planning Implementation Funding	NR Article 83-901 et. seq.	X	X	X	X	X		State chartered local authority
6. Solid Waste Facility Permit	A-7	Regulatory	Article 43 Section 394							

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
7. State Operation of Solid or Hazardous Waste Facilities	A-7	Planning Funding Implementation	NR Article Title 3 Subtitle 1 §3-701 et. seq.	X	X	X	X			Local governments and private entities may contract with MES for construction and/or operation of their facilities
8. Litter Control and Used Oil Recycling	A-7	Regulatory	NR Article §3-801 §8-726 §8-1411.1 Article 27 Section 468.9	X	X	X	X			
9. Pesticide Regulation and Labeling Act	A-7	Regulatory	Agriculture Article Subtitles 5 and 6	X	X	X	X			
10. Governor's Council on Toxic Substances	A-8	Advisory	Article 43 Section 813A	X	X		X			
E. AIR QUALITY AND NOISE CONTROL MANAGEMENT										
1. Air Quality Program	A-8	Policy Planning Regulatory	Article 43 Section 690 et. seq. Federal Law	X	X		X	X	X	State carries out delegated portions of Federal mandate. Local governments participate in enforcement

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles			
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description	
F. FISHERIES AND WILDLIFE MANAGEMENT	2. Noise Abatement Program	A-8	Policy Regulatory	Article 43 Section 822 et. seq.	X	X		X	X	X	State implements Federal standards. Local governments participate in enforcement and includes noise zones in local zoning map
	1. Fisheries Management Program	A-8	Definition Policy Regulatory Planning	NR Article 84-205	X	X	X	X		X	U.S. Fish and Wildlife Service (Department of Interior) - State grants and Federal regulations
	2. Wildlife Management Program	A-8	Policy Regulatory Planning	NR Article §10-801	X	X	X	X		X	U.S. Fish and Wildlife Service - State grants and Federal regulations
	Migratory Bird Law	A-8	Regulatory	NR Article §10-401	X	X	X	X		X	U.S. Fish and Wildlife Service - State grants and Federal regulations
	Non-Game and Endangered Species Conservation Act	A-8	Regulatory	NR Article §10-2A-05 (c)	X	X	X	X		X	U.S. Fish and Wildlife Service - State grants and Federal regulations
	3. Forest Management Program	A-8	Policy Planning Regulatory	NR Article §5-201	X	X	X	X			

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
G. RECREATION, OPEN SPACE, AND HERITAGE CONSERVATION PROGRAMS	Forestry Conservancy Districts	A-9	Regulatory	NR Article §5-601 et. seq.	X	X	X	X	X	Participation in program management and implementation
	Forest Conservation Management	A-9	Planning Regulatory	NR Article §5-301 et. seq.	X	X	X	X		
	Forest Protection	A-9	Planning Regulatory	NR Article §5-608 to 5-610, §5-701 et. seq.	X	X	X	X		
	1. Acquisition and Easement Programs									
	Program Open Space	A-9	Definition Planning Policy Grants Regulatory	NR Article §5-901 et. seq.	X	X	X	X	X	Local participation in Program; Federal Land and Water Conservation Fund Program; administered by the U.S. Heritage Conservation and Recreation Service
	Conservation Easement Program	A-9	Easement Acquisi-	NR Article §3-203	X	X	X	X		

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
Maryland Agricultural Land Preservation Foundation	A-9	Policy Easement Acquisition	Agricultural Article §2-501 to 5-515	X	X	X	X	X		Local participation in Program
Maryland Historical Trust	A-9	Policy Planning Regulatory Easement Acquisition	Article 41 §181A et. seq.	X	X	X	X	X		Local participation in Program
2. Agricultural Land Assessment	A-10	Taxation Regulatory	Article 81 §19	X	X		X			
3. Historic Preservation Districts	A-10	Easement Regulatory	Article 66B	X	X		X	X	X	Local implementation under Federal and State regulations
4. Scenic and Wild Rivers Act	A-10	Definition Policy Planning Regulatory	NR Article §8-402(A)	X	X	X	X	X	X	Local implementation of Program; Federal regulations administered by the U.S. Heritage Conservation and Recreation Service
5. Archaeological Resource Law	A-10	Regulatory	NR Article §2-303 et. seq.	X	X	X	X			
6. Waterway Improvement Fund	A-10	Funding Program for improving public use of water	NR Article §8-716	X	X	X	X			

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
H. COASTAL ZONE MANAGEMENT PROGRAM	A-11	Policy Planning Implementation	Federal Law Executive Order Secretarial Order	X	X	X	X	X	X	State Program carried out under Federal mandate. Local government participates in planning and implementation
I. RESEARCH AND EDUCATION										
1. University of Maryland Center for Environmental and Estuarine Studies	A-11	Research Education	NR Article §3-401 et. seq.	X	X	X	X			
2. Environmental Protection Agency Chesapeake Bay Program	A-11	Planning Research	Federal Law	X		X	X			
3. Sea Grant Program	A-11	Research	Federal Law	X	X	X	X			
4. Maryland Geologic Survey	A-11	Research	NR Article	X	X	X	X			
5. Chesapeake Bay Research and Coordination Act of 1980	A-11	Federal-Interstate Research Coordination	Federal Law	X	X	X	X			

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
J. INTERGOVERNMENTAL COORDINATION										
1. Susquehanna River Basin Commission	A-12	Federal-Interstate Compact/Commission	NR Article §8-301	X			X		X	Federal government is a Commission member and provides funds
2. Bi-State Working Group on Chesapeake Bay	A-12	Executive Interstate Coordination	NR Article §8-204	X	X	X	X			
3. Chesapeake Bay Commission	A-12	Legislative Interstate Coordination	NR Article §8-302 et seq.	X	X	X	X			
4. Interstate Environmental Compact	A-12	Interstate Coordination	NR Article §3-501 Federal Law	X	X	X	X			
5. Interstate Commission on the Potomac	A-12	Coordination	Potomac River Basin Compact of 1940, as amended in 1970 NR Article §21-102	X	X	X	X			

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
6. Potomac River Fisheries Commission	A-12	Regulation Coordination	NR Article 84-306	X			X			
7. Atlantic States Marine Fisheries Commission	A-12	Coordination	NR Article 84-301-5	X			X			
K. STATE PLANNING PROGRAMS										
1. State Development Plan	A-12	Policy Planning	Article 88C, Sections 2,5	X	X	X	X	X		Carried out in cooperation with local government
2. Areas of Critical State Concern	A-13	Advisory	Article 88C, Sections 2,5	X	X	X	X	X		Carried out in cooperation with local government
3. Intervention	A-13	Advisory Legal Standing	Article 88C, Section 2	X	X	X	X	X		Carried out in cooperation with local government
4. State Capital Program	A-13	Funding Budgetary	Article 88C, Section 6	X	X	X	X	X		
5. State Clearinghouse	A-13	Project and Program Review Coordination	Article 88C, Section 13 Federal Law	X	X	X	X	X	X	Federally mandated. Local governments have opportunity for review

TABLE 1 - MANAGEMENT PROGRAMS APPLICABLE TO WETLANDS

Program/ Sub Program	Appendix Page	Type of Program	Citation	Wetlands Affected		Type of Impact		Intergovernmental Roles		
				Tidal	Non-Tidal	Direct	Indirect	Local	Federal	Description
6. Planning Coordination and Technical Assistance	A-13	Coordination Assistance	Article 88C, Section 2	X	X	X	X			
L. MISCELLANEOUS										
1. Coastal Facilities Review Act	A-13	Policy Planning Regulatory	NR Article §6-501 et seq.	X	X	X	X	X		Local governments must be consulted
2. Power Plant Siting Program	A-13	Policy Planning	NR Article §3-301 et seq.	X	X	X	X	X		Local governments must be consulted
3. Maryland Environmental Policy Act	A-14	Policy Impact Analysis	NR Article Title 1, Subtitle 3							
4. Transportation and Port Programs	A-14	Policy Planning Funding Regulatory	Transportation Article Titles 2, 5, 6, 8	X	X	X	X			
5. Economic Development Programs	A-14	Policy Planning Funding	SEE CRITICAL AREAS REPORT III, SECTION D							"PRESERVATION AND ENHANCEMENT OF RAIL SERVICE", PART
6. Environmental Education	A-14	Information		X	X	X	X	X		Local school systems set curricula
7. Tax Policy				X	X	X	X			

III. AREA DESCRIPTIONS AND MAPS

SEVERN RUN TRIBUTARIES

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 1

LOCATION:

The Severn Run area encompasses the Severn Run main stream and tributaries beginning just south of Robert Crain Highway (Maryland Route 3) running north-easterly toward Quarterfield Road. Portions of this area include the Severn Run Natural Environment Area which is under State ownership.

AREA DESCRIPTION:

The area encompasses roughly 3,000 acres of wetlands, heavily wooded ravines and stream valleys contiguous to and including the Severn Run Natural Environment Area and generally paralleling the Run and some of its tributaries. The woodland cover is primarily a mature oak-hickory forest. This mature hardwood forest is composed primarily of chestnut oak, with white oak, hickory, and pitch pine also present.

Other rare vegetation is reported along the Severn Run in the form of a species of climbing fern (*Lygodium palmatum*), a plant that is extremely rare in Maryland.

The Severn Run is classified as a "recreational" trout stream and is now stocked with trout. Jabez Branch, a major tributary, is classified as a natural trout stream.

OWNERSHIP PATTERNS:

Property ownership along the Severn River and its tributaries is characterized by multiple ownership. Description of ownership is covered below by

river segment:

Area south of Maryland Route 3 - Major portions of land just south of Route 3 are currently owned by the Maryland Forest and Parks Service.

Area north of Maryland Route 3 to former W. B. & A Railroad - Areas in the stream portions are under the control of the Maryland Forest and Parks Service. Multiple ownership patterns prevail on adjacent areas. Some subdivision activity has occurred along this section of the river.

Area north of former W. B. & A Railroad - This area of the Severn Run is characterized by large private landholdings. The northern reach of the Run extends to the boundary of Ft. George G. Meade.

CURRENT PLANS AND ZONING:

Along the majority of the main stem of the Severn Run, the current zoning classification is Open Space (OS). This includes the area basically within the Severn Run Natural Environment Area. Below the environment area, the predominant zoning category is RA - Agricultural Residential District (two acre lots). North of the environment area, the major zoning category is R1, which allows residential development on 40,000 square foot lots with some R5 (7,000 square foot residential lots) and W1B (light industry). Land west of the environment area is zoned OS, DD (deferred development), R2 (20,000 square foot residential lots), R5, R15 (multi-family residences), W2 (industry), and W3 (heavy industry).

The impact area of Severn Run and its tributaries is in the sewer and water "no planned service" category. In the northern limits of the impact area, water and sewer service is in the 3-5 year category.

CONTINUING PLANNING AND STUDIES:

The Department of Natural Resources is continuing its acquisition program along the Severn Run main stream. At present, 1,196 acres have been acquired and 419.9 acres are in the process of being acquired, for a total of 1615.9

acres. The acquisition goal is 1618 acres. The county is near publication of the Severn Run Watershed and Management Study to help improve stormwater management in the basin.

The Maryland Department of Transportation has completed a Final Environmental Impact Statement for the proposed I-97 between Baltimore and Annapolis. This road is proposed to use the current alignment of Maryland Route 3 where it crosses Severn Run. As presently planned, an additional bridge over Severn Run will be constructed, spanning the wetlands beneath. An interchange with Maryland Route 32 is also planned, upgrading the current interchange with Route 3. Funds for construction have not been appropriated.

THREATS AND PROBLEMS:

The major threat to Severn Run centers on development pressures occurring on the periphery of the impact area. Increased development activity and resulting increase in stormwater runoff and consequent siltation are the major threats to the natural features and aquatic life along the Severn Run. Construction of Interstate 97, if not carefully carried out, could aggravate the siltation problems in Severn Run.

MANAGEMENT:

Effective, long-term management of the Severn Run impact area is tied to the level of activity that can be accommodated along the edges of the Run and its tributaries. Certain management tools are available, such as an expansion of the County's Open Space Zone in the context of the comprehensive planning process. Implementation of the State Scenic Rivers Program, restricting development near steep slopes, obtaining easements, and providing effective stormwater and sediment controls can combine to form a workable management plan. Consideration of expansion of the Severn Run Natural Environment Area will provide direct protection to valuable natural resources along the Severn Run tributaries. The design of Interstate 97 in the Severn Run area should be sensitive to the values of the Critical Area. Construction procedures should be planned to minimize disruption in the valley. Strong erosion control and other mitigation measures should be designed and enforced. The

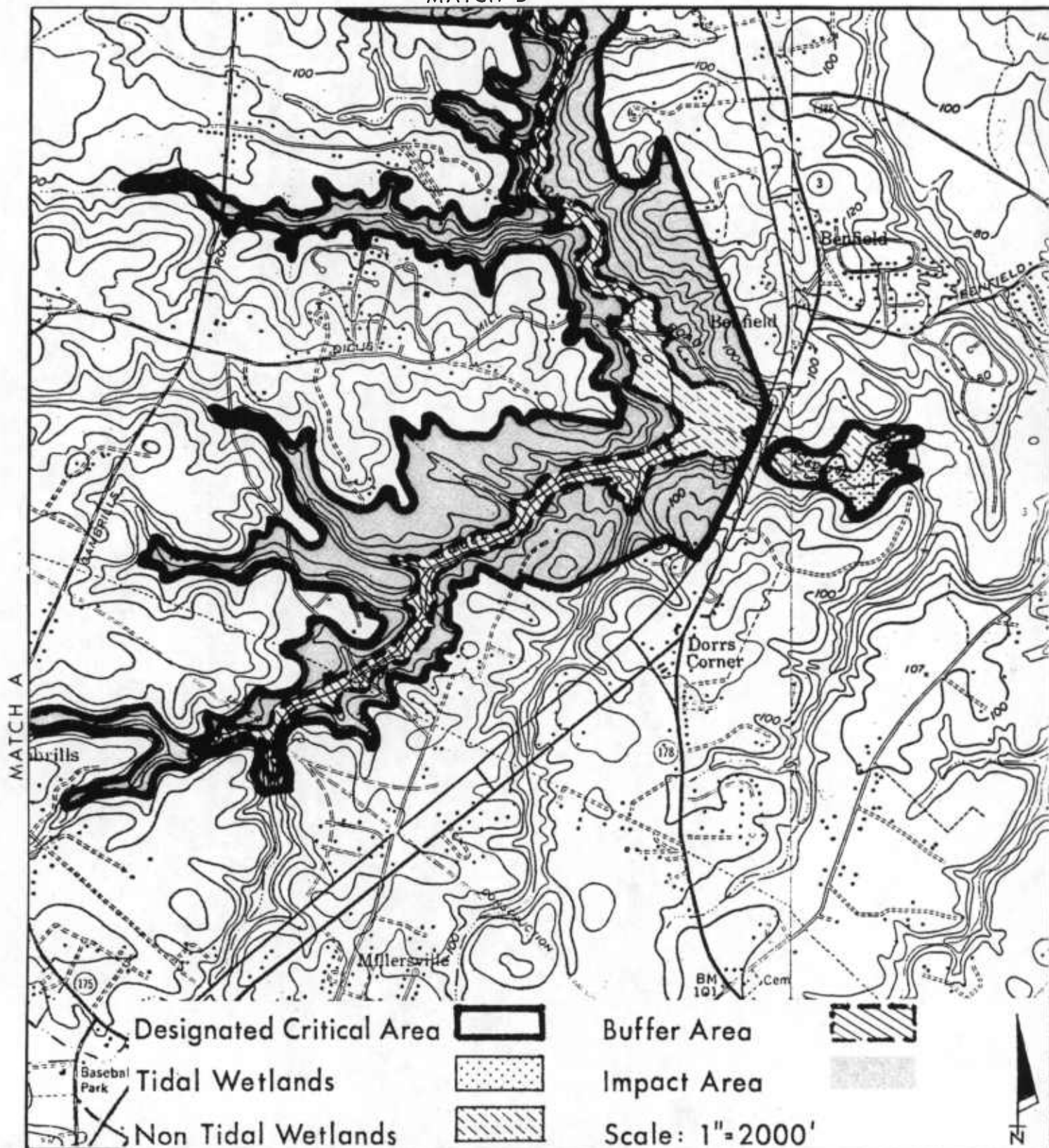
Department of Transportation should work closely with the Departments of Natural Resources and State Planning and Anne Arundel County as the project progresses.

AREAS OF CRITICAL STATE CONCERN

Site Name SEVERN RUN TRIBUTARIES - TN1

County ANNE ARUNDEL Acreage 3,000 Date Designated JAN.1981

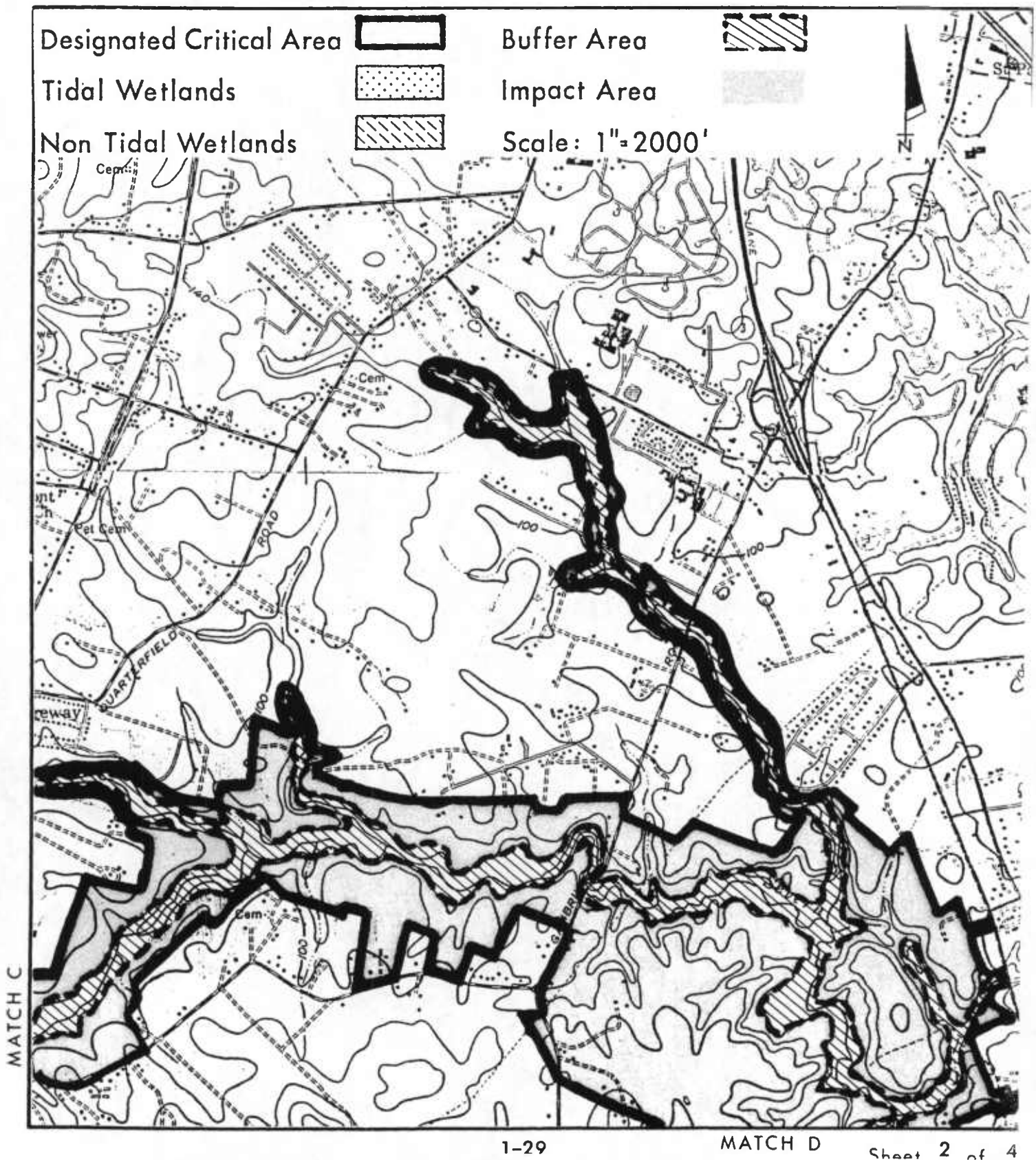
MATCH D



AREAS OF CRITICAL STATE CONCERN

Site Name SEVERN RUN TRIBUTARIES - TN1

County ANNE ARUNDEL Acreage 3,000 Date Designated JAN.1981



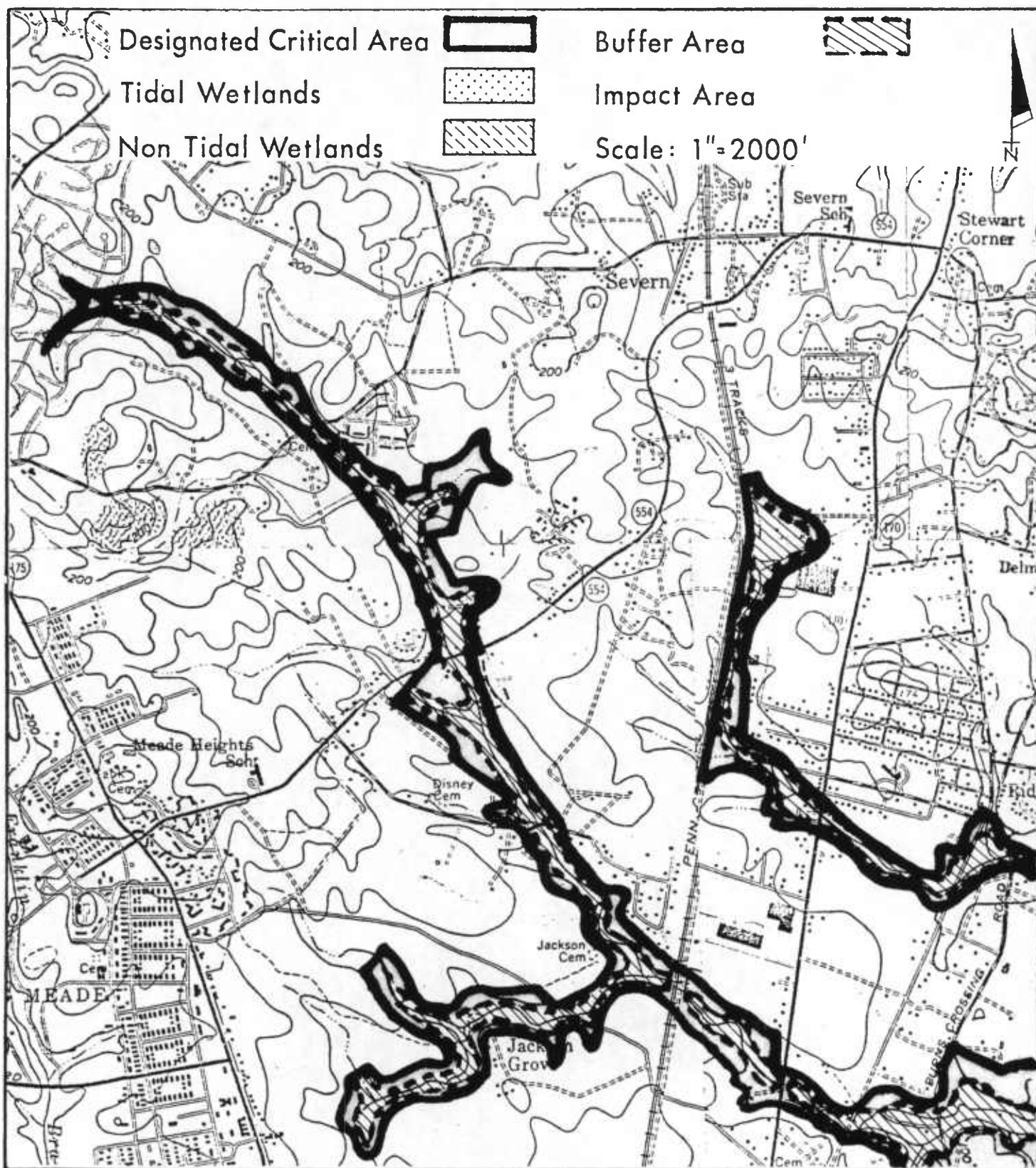
AREAS OF CRITICAL STATE CONCERN

Site Name SEVERN RUN TRIBUTARIES - TN1

County ANNE ARUNDEL

Acreage 3,000

Date Designated JAN.1981



AREAS OF CRITICAL STATE CONCERN

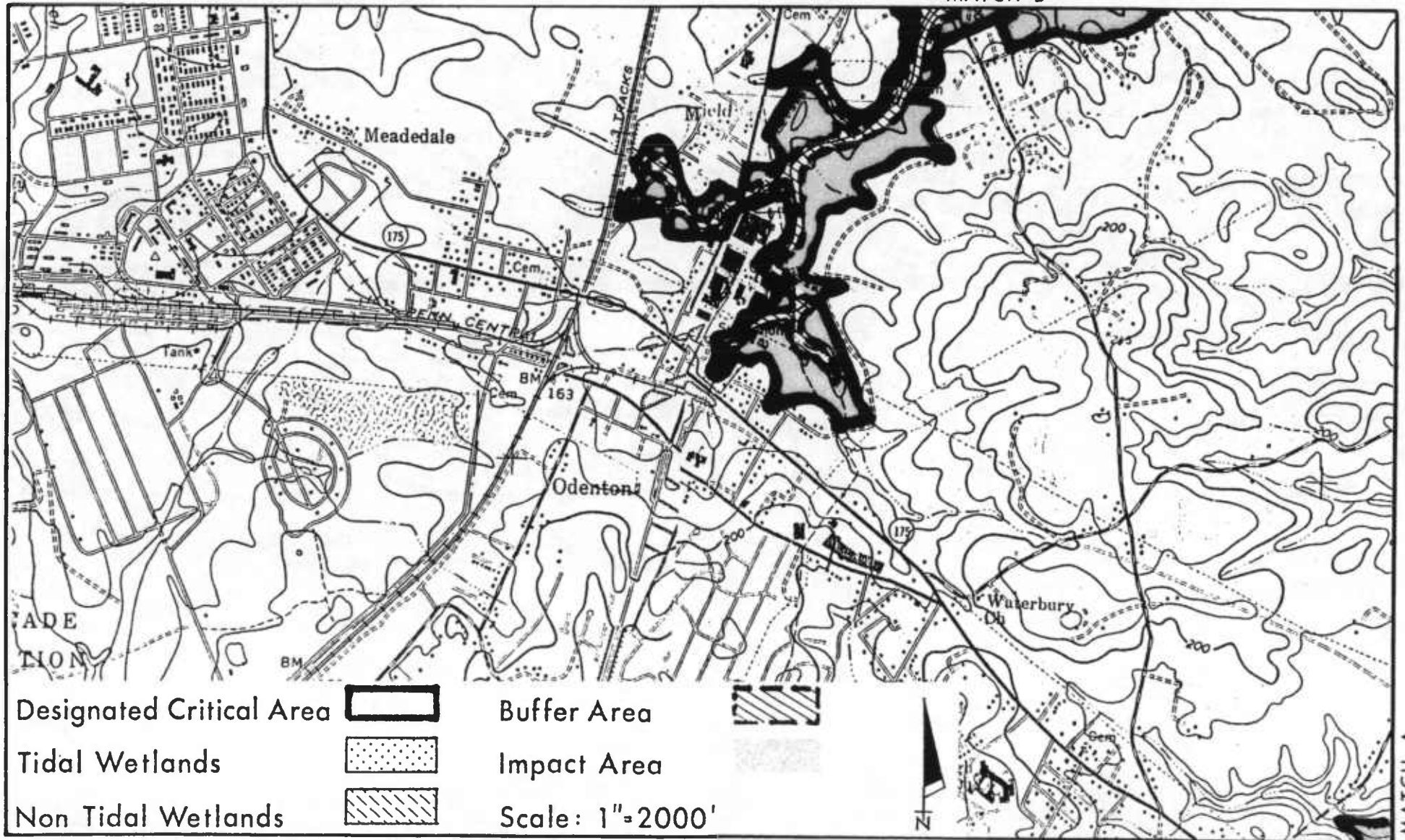
Site Name SEVERN RUN TRIBUTARIES - TN1

County ANNE ARUNDEL

Acreage 3,000

Date Designated JAN.1981

MATCH B



JUG BAY

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 2

LOCATION:

These wetlands lie along the Prince George's and Anne Arundel counties' shorelines of the Patuxent River. They begin just south of Bayard Road in southwestern Anne Arundel County at a point near Spyglass Island and extend to the south of Jug Bay including the wetlands of Mattaponi Creek and Merkle Wildlife Management Area. The Bay itself lies at a point roughly one mile from where Anne Arundel, Prince George's, and Calvert counties meet.

AREA DESCRIPTION:

The recommended site embraces several distinctive ecological communities and includes tidal wetlands, non-tidal wetlands and an impact or buffer area at least equivalent to the 100-year floodplain. Most notable of the communities are the freshwater marshes, some of the largest in the State.

This variety of ecological communities supports an abundant and varied animal and plant life. Since the area lies within the Atlantic Flyway, Jug Bay is a haven for over 100 species of bird life and is important for waterfowl reproduction and feeding. Sixteen species of breeding and wintering ducks use the area. Several species of native and migratory song birds, as well as Canada geese, whistling swan, kill-deer and the quail can be observed at the site. Other important birds are the Southern bald eagle, peregrine falcon (both national endangered species), osprey, and the great blue heron. This is a major site in Maryland where railbirds (Sora) concentrate during fall migration.

This stretch of the Patuxent River, including Jug Bay, is the farthest upriver good spawning area for anadromous fish. Fish species include small-mouth bass, crappie, yellow perch, white perch, and channel catfish. Mammals found at the site include raccoon, muskrat, opossum, beaver, mink, river otter, red fox, grey fox, skunk, and whitetail deer.

Plant life in the Jug Bay area includes upland hardwood forest species such as oak, beech, tulip poplar, sweet gum, maple and sassafras; and related understory vegetation; non-tidal wetland plant species such as cardinal flower, turtle-head, virginia bluebell, wild azalea, and skunk cabbage; and most importantly, thousands of acres of tidal marshland. Marsh plant species include wild rice, pickerel weed, spatterdock, arrow-arum, marsh mallow and phragmites. The dominant plant species is wild rice, which along with other seed-bearing plants such as water millet and smart weed, is food for as many as 25,000 wintering waterfowl.

OWNERSHIP PATTERNS:

Anne Arundel County has purchased approximately 84 acres of wetland and upland on the site for preservation and park use and is negotiating for an additional 332.5 acres of wetland and upland for these purposes.

On the Prince George's County side, the Washington Suburban Sanitary Commission owns a large parcel at the confluence of the Patuxent River and Branch Creek. The Western Branch Sewage Treatment Plant is at this location. Other large parcels, most of them lying south of Route 4, are owned and maintained by the Maryland National Capital Park and Planning Commission as a stream valley park.

The rest of the land on the two shorelines lies in multiple private ownership.

CURRENT PLANS AND ZONING:

On the Anne Arundel County side, part of the site is zoned in the OS (Open Space) category which permits recreation uses. The rest is zoned RA (Residential Agricultural), a classification allowing agricultural

activities and also two acre residential lots. The land lying east of the site toward Md. Rt. 4 is also zoned RA.

The Anne Arundel County Sewerage and Water Plan includes the entire site and much of the land adjacent in the "no service planned" category.

Prince George's County has zoned its portion of the site in the OS open space classification, which allows dwelling units at a density of one per five acres. The County water/sewerage plan places the site in the S6/W6 "no service planned" categories.

CONTINUING PLANNING AND STUDIES:

The Patuxent River is designated a scenic river under provisions of the Maryland Scenic Rivers Act of 1968. The River and surrounding wetlands are considered to be an extremely valuable ecosystem.

In efforts to protect the Patuxent River, the Department of State Planning is developing a Patuxent River Policy Plan. This Plan will consider threats and problems to the River and recommend strategies for alleviating current difficulties and preventing their recurrence.

THREATS AND PROBLEMS:

Any degree of alteration or intrusion by development in the site itself will have significant negative impacts on this ecosystem. The deleterious effects of filling or dredging projects to the indigenous wildlife habitats in the area would be instantaneous, profound and irreversible.

While development in the adjacent impact area - the area along the Pindell Road system east of Md. Rt. 4 - would not be substantial, agricultural activities and scattered residential development would still pose a threat to the site by virtue of sedimentation and stormwater runoff.

The most serious current water quality problems are sedimentation and nutrient enrichment.

MANAGEMENT:

Long-term management techniques for protecting this area include the acquisition of land and/or purchase of development rights. Another technique being considered is the rezoning of the entire area to OS, a classification more in keeping with its proposed open space/conservation use. Other voluntary management techniques include historic and conservation easements. Since development is possible on a portion of the land lying within the Critical Area, sedimentation and runoff control must be enforced to avoid siltation of the wetlands themselves.

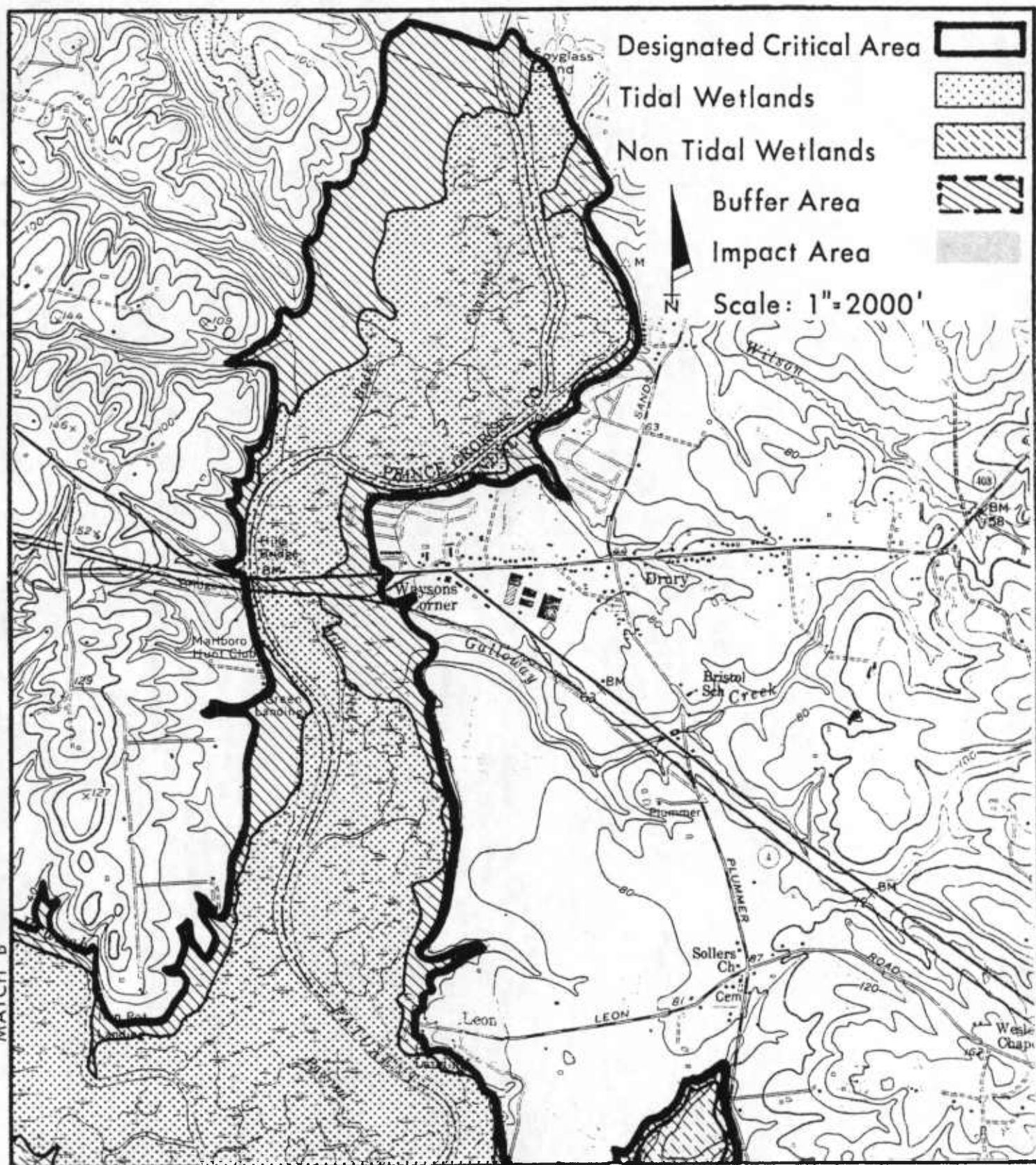
The impact area surrounding Jug Bay must also be managed through sedimentation and runoff controls. Another desirable mechanism here is the purchase of development rights to prevent the conversion of agricultural land to urban use. Careful monitoring and enforcement of sediment control laws is necessary for surface mining operations (sand and gravel) just upriver from the impact area.

Finally, the effluent from the Western Branch Sewage Treatment Plant must be monitored in order to determine if these flows are adversely affecting the wetlands by Jug Bay.

AREAS OF CRITICAL STATE CONCERN

Site Name JUG BAY - TN2

County PRINCE GEORGE'S & ANNE ARUNDEL Acreage 4,800 Date Designated JAN.1981



MATCH A

1-36

Sheet 1 of 4

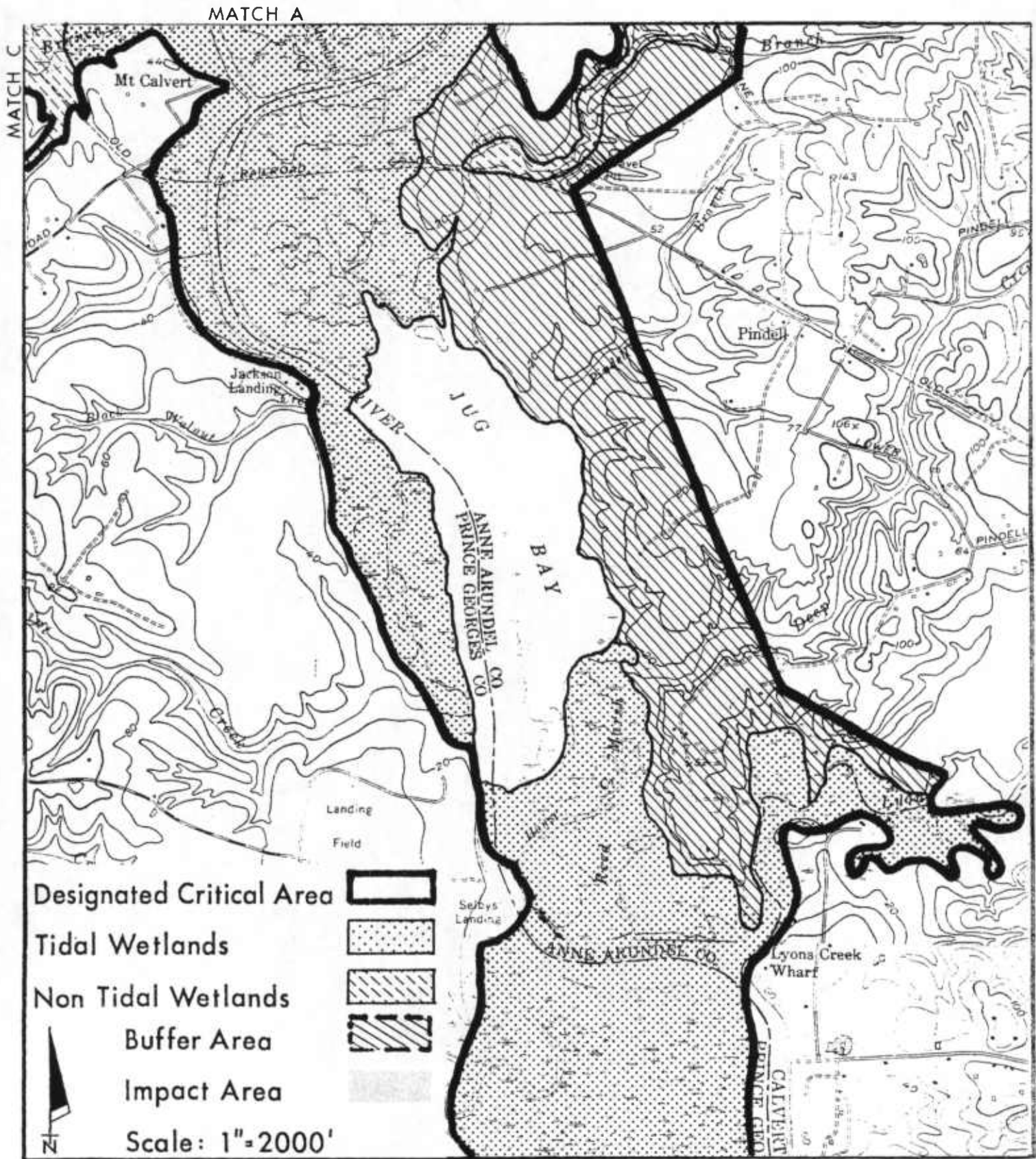
AREAS OF CRITICAL STATE CONCERN

Site Name JUG BAY - TN2

County PRINCE GEORGE'S & ANNE ARUNDEL

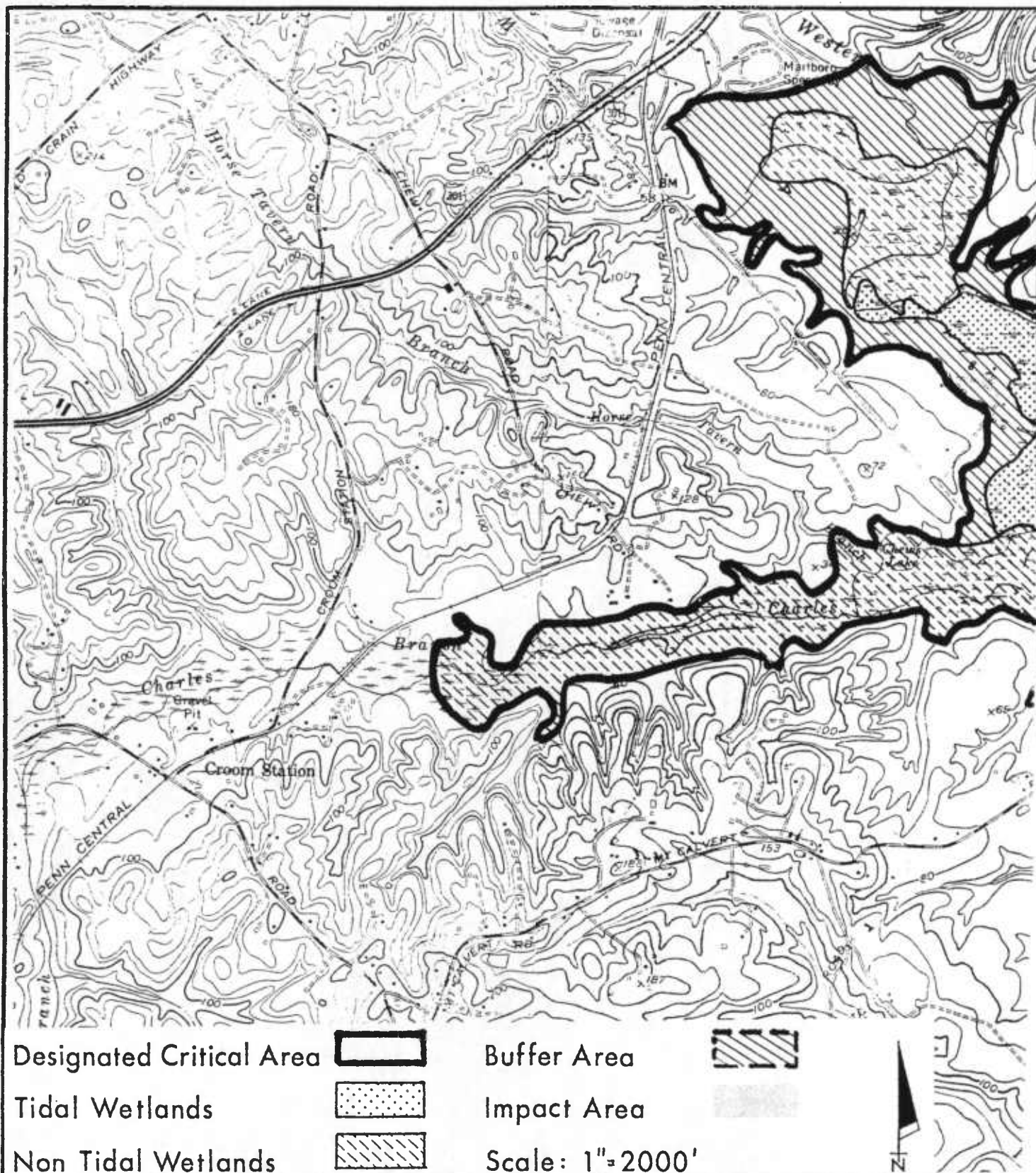
Acreage 4,800

Date Designated JAN.1981



AREAS OF CRITICAL STATE CONCERN

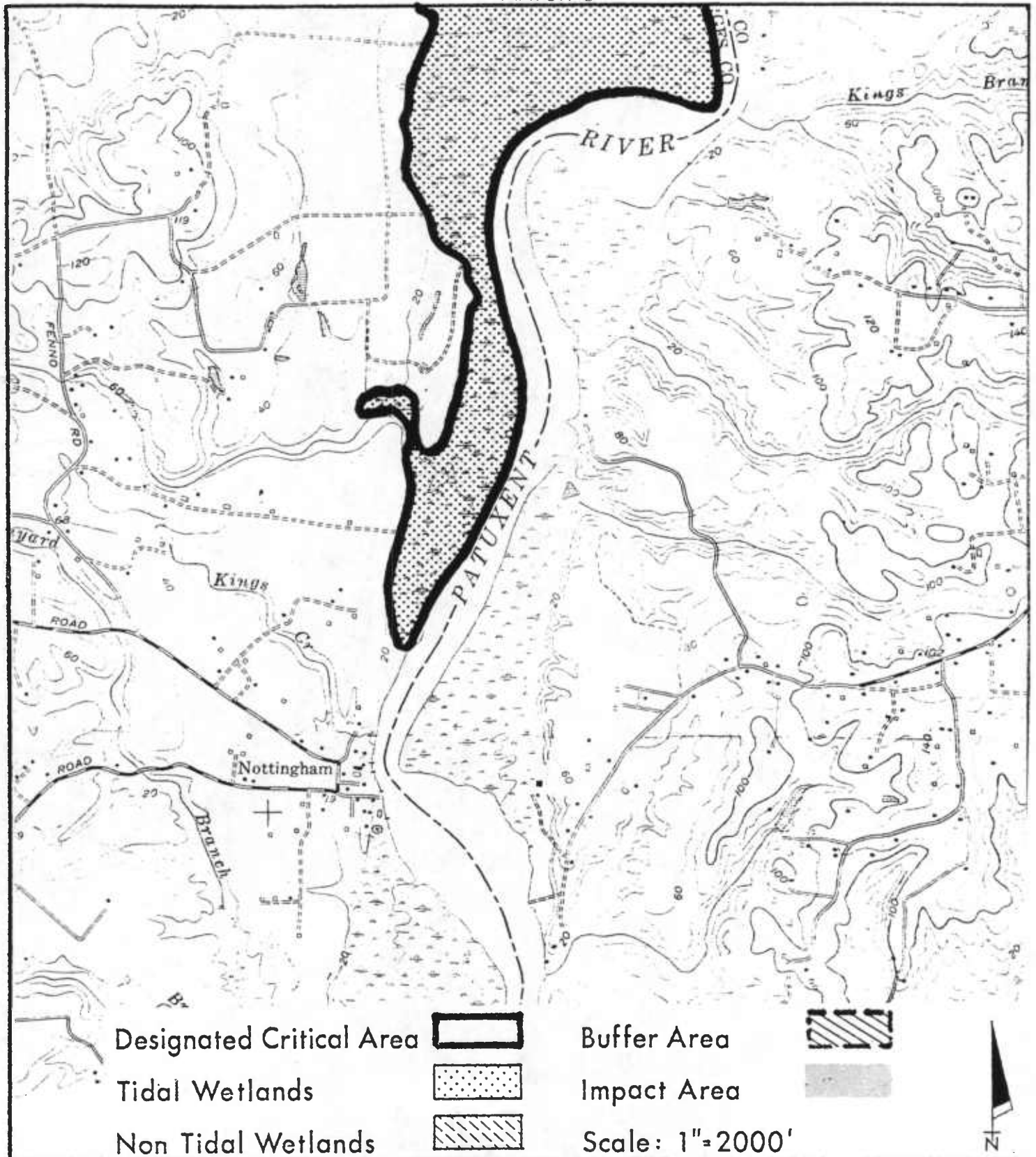
Site Name JUG BAY - TN2
County PRINCE GEORGE'S & ANNE ARUNDEL Acreage 4,800 Date Designated JAN.1981



AREAS OF CRITICAL STATE CONCERN

Site Name JUG BAY - TN2
County PRINCE GEORGE'S & ANNE ARUNDEL Acreage 4,800 Date Designated JAN.1981

MATCH D



EAGLE HILL BOG

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 3

LOCATION:

Eagle Hill is located in the east/central portion of Anne Arundel County, on the north shore of the Broad Creek estuary off the Magothy River. The site is bordered on the northwest by Blackhole Creek Road, and on the north-east by Shore Road. Eagle Hill Road runs through the site in a north-south direction. The boundary runs south from the intersection of Shady Lane and North Shore Roads.

AREA DESCRIPTION:

The size, quality and character of this approximately 320 acre natural area combine to form a valuable habitat for wildlife and plant life, including several rare species. An extensive upland oak-pine forest covers the rolling topography of the site. An unusual topographic feature is Eagle Hill itself, a 158-foot high promontory rising from the coastal flatland. There are several marshes and a bog along the southern edge of the site. The bog is notable for its unusual vegetation. Clethra is present while sweetgum, sweetbay, black gum and red maple form a dense border. Rare vegetation on the Eagle Hill site includes sundew, meadow beauty, leatherleaf, and rush. Cranberry, which is found here, is at the southern limit of its distribution. Switchcane at its northern limit of distribution is also found as well as the fragrant water lily.

The young oak-pine forest contains southern red oak, chestnut oak, pitch pine and Virginia pine, with sweetgum, oak and sassafras in the understory. The forest's dense shrub layer features blueberry, huckleberry and holly.

This extensive, yet relatively undisturbed woodland and waters are home to abundant wildlife, particularly birds: yellowthroat, cuckoo, broadwing hawk, great blue heron, great crested flycatcher, pine warbler, rufus-sided towhee, and mourning dove. Several species of duck can also be found at the sites. Small game populations include muskrat, fox, raccoon and rabbit.

Also located within this site are several tidal wetland areas. In the vicinity of Blackhole Creek, two tidal wetlands exist containing a variety of different types of marsh vegetation, such as *Spartina alterniflora* and *Panicum virgatum*. Eastward of these wetlands and within this site, is a larger tidal wetland on Broad Creek. Again, a variety of marsh vegetation is present such as *Spartina alterniflora*, *Typha*, *Iva frutescens*, and *Baccharis halimifolia*. These marsh areas are also interspersed with mud-flats that are seasonally vegetated by emergent broadleaf vegetation.

OWNERSHIP PATTERNS:

Land ownership immediately around the Eagle Hill bog is presently under the control of Charles H. Steffey, Incorporated, a real estate development firm which is in the process of marketing this land area as custom-individual homesites.

Ownership immediately north of the Steffey property is under a single ownership (2 parcels, east and west sides of Eagle Hill Road, totalling 242 acres). Along the east side of Eagle Hill Road, south of the bog, multiple ownerships appear with the largest single property comprising 26 acres.

CURRENT PLANS AND ZONING:

The current zoning classification for the bog and surrounding impact area is RA. This zone, Agricultural Residential District, permits, in addition to agricultural uses, low density residential development. Being the least dense residential zone, each individual lot must have a minimum net area of two acres.

Water and Sewer Service facilities for the Eagle Hill area are in the no-planned service category. Development can only be supported through on-site systems.

CONTINUING PLANNING AND STUDIES:

Currently, the Smithsonian Institute is in the process of mapping and developing monitoring techniques within the bog. Accurate water level elevations and vegetative typing will be useful in monitoring change through time within the bog. Also, changes resulting from adjacent development and development in the watershed can be detected.

THREATS AND PROBLEMS:

Property now under the control of Charles H. Steffey is regulated by covenants attached to the final subdivision plan and each individual lot deed as lots are sold. These covenants restrict the utilization of all lots within the project and provide an adequate buffer area adjacent to the bog. Management and enforcement of these covenants and sediment control measures are the primary problems associated with the Steffey tract.

The adjoining land areas, forming the impact area, are vacant and undeveloped, but the area's attractiveness, its road accessibility, and its proximity to boating waters give the area high development potential. Utilization of these adjoining land areas requires careful management.

MANAGEMENT:

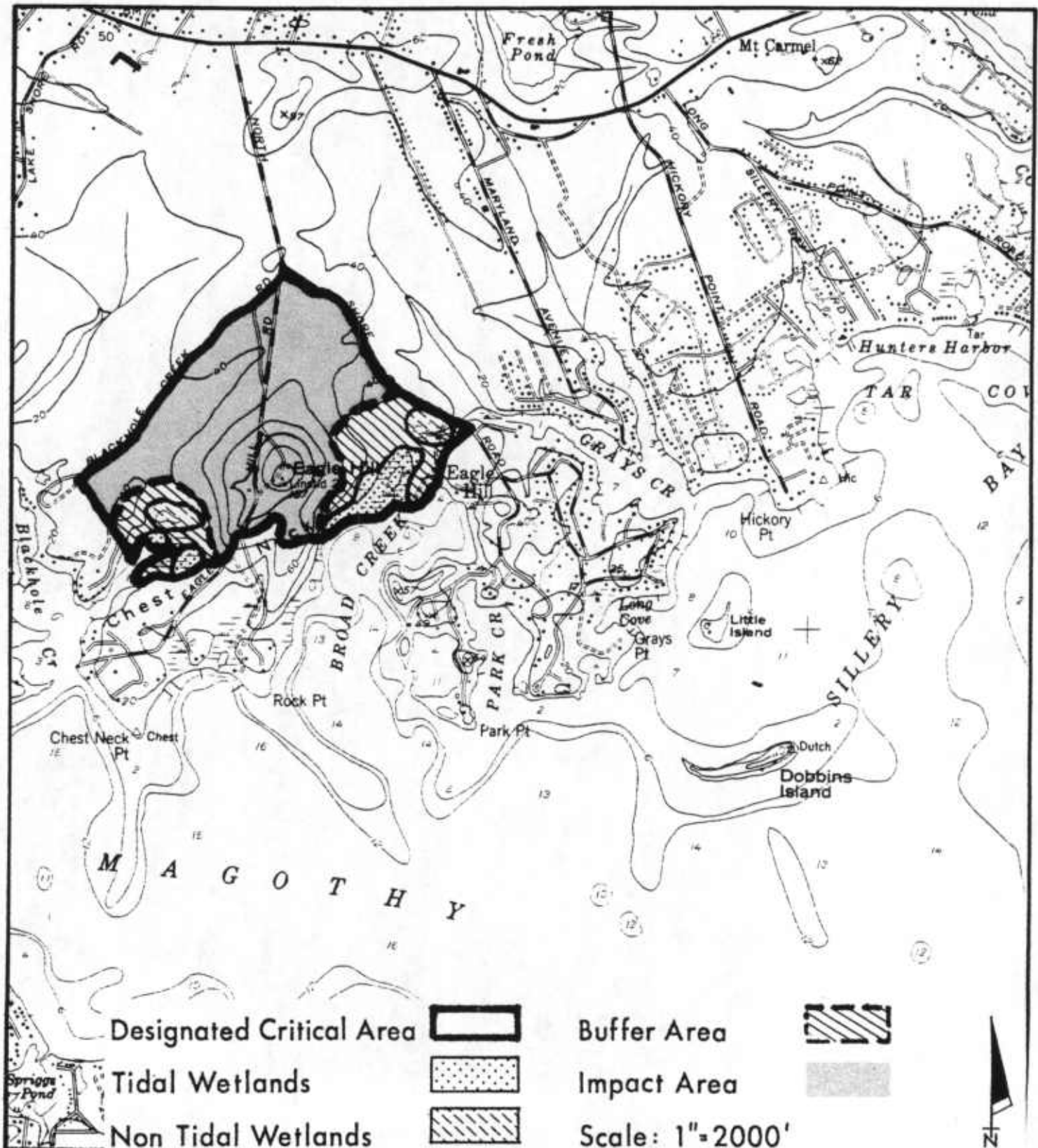
Based on past work with the Steffey tract, the buffer area of the bog is under a management control plan. The enforcement of covenants and sediment control plans should contribute to proper management of this portion of the critical area.

Open Space zoning should be considered for the wetlands and other sensitive portions of the site. The utilization of management tools developed during review of the Steffey tract must be utilized as a model for all future development proposals in this area.

AREAS OF CRITICAL STATE CONCERN

Site Name EAGLE HILL BOG-TN3

County ANNE ARUNDEL Acreage 320 Date Designated JAN.1981



SOUTH RIVER HEADWATERS

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 4

LOCATION:

The South River headwaters area begins immediately south of U. S. Route 50-301 in central Anne Arundel County, approximately five miles west of Annapolis. The headwaters of the South River divide into two main streams (North River and Bacon Ridge Branch) at a point near the Maryland Route 450 crossing of the river. These headwater streams extend northward to a point just south of Maryland Route 3.

AREA DESCRIPTION:

The South River headwaters embrace the stream valleys of the North River and Bacon Ridge Branch and their smaller tributaries. The two principal streams flow directly into the South River.

The site is predominantly steep-sloped upland woods bordering lowland river-associated wetlands. The upland areas are especially rugged; slopes here may average one hundred percent in degree of incline (a rise of one hundred feet in one hundred feet of horizontal distance). The entire area is an unusual transition zone, from tidal freshwater marsh to dense swamp and bottomland forest to upland forest.

This variety of habitats shelters a variety of animal life and plant types. Important species in the marshes are mallards, wood ducks, blue-winged teal, great blue heron, sandpiper, and killdeer. Muskrat frequent the marshes. Important wildlife in the swamp areas include white-tailed deer, woodcock, red fox, gray fox, rabbit, great horned owl, barred own, and quail. A variety of reptiles and amphibians is found.

The most notable resident is the endangered southern bald eagle, which nests in the vicinity.

Dominant trees in the upland forest are beech, tulip poplar, northern red oak, and hickory. Red maple, river birch, green ash, and sweetgum are the dominant trees of the wooded swamps. Other tree species are alder, black willow, sycamore, and several species of oak.

OWNERSHIP PATTERNS:

Property ownership in the area south of U.S. Route 50/301 is characterized by one large parcel on the west shore and the Heritage Harbour subdivision development on the east side of the South River.

North of U.S. Route 50/301, following the eastern branch, known as Bacon Ridge Branch, ownership is dominated by the State-owned Crownsville State Hospital. Additional, large parcels of land are present on the upper portions of this branch. The western branch known as North River, is dominated by multiple private ownerships with some subdivision activity.

CURRENT PLANS AND ZONING:

Zoning in the South River Headwaters Critical Area is predominantly RA - Agricultural Residential District, which allows residential development on a minimum lot area of 2 acres. The main stem of the Bacon Ridge Branch is zoned RA. A portion of the land draining to Bacon Ridge Branch from the east is zoned Open Space. Land near the intersection of Crownsville Road and Chesterfield Road is zoned R2 (20,000 square foot residential lots). The area south of Route 50/301 and east of the South River is zoned R2 and MA1 (community marina). Northwest and southwest of Johns Hopkins Road, land in the critical area is zoned R1 (40,000 square foot residential lots) and R5 (7,000 square foot lots).

With the exception of two areas near U.S. Route 50/301, the water and sewer service facilities plan shows the South River Headwaters to be in a

"no planned service" category. Located on the northern side of U.S. Route 50/301, on the east bank of the South River, is a small area that is classified in the 11-20 year service category for water. On the south side of U.S. Route 50/301, again on the east bank, water service is in the 6-10 year service category and sewer service is in the 6-10 year service category as well.

CONTINUING PLANNING AND STUDIES:

Study work is continuing on the Baltimore-Annapolis Corridor study to provide improved transportation alternatives in this area. The proposed I-97 corridor runs through the Critical Area. A new right-of-way is proposed through the northeast portion of the watershed around Crownsville State Hospital. Another section runs along the existing Md. Route 50 from the South River, east toward Annapolis. Maryland DOT has completed a Final EIS. Funds for construction have not been appropriated.

THREATS AND PROBLEMS:

The major threats to the South River Headwaters are: potential erosion and siltation damage and loss of vegetation from development activity in the area, possible impacts from the Boehm-Joy landfill, and directed secondary impacts from the construction of I-97.

MANAGEMENT:

Long-term management of areas along the South River Headwaters is tied to effective control of activity along the edges of streams feeding the river. To prevent sediment from reaching streams in the South River headwaters and to prevent damage to slopes and streams from stormwater, clearing and grading should be prohibited below the 100 foot contour. At this elevation slopes become steep going down into the stream valleys. Restrictive covenants should be placed on all new subdivision lots during the subdivision approval process. These covenants should restrict clearing, grading, floodplain crossings, and protect sensitive areas. Expansion of the Open Space Zone within the context

of the comprehensive planning process and the provision of effective stormwater and sediment controls within new development can contribute to forming a workable management plan for the South River Headwaters.

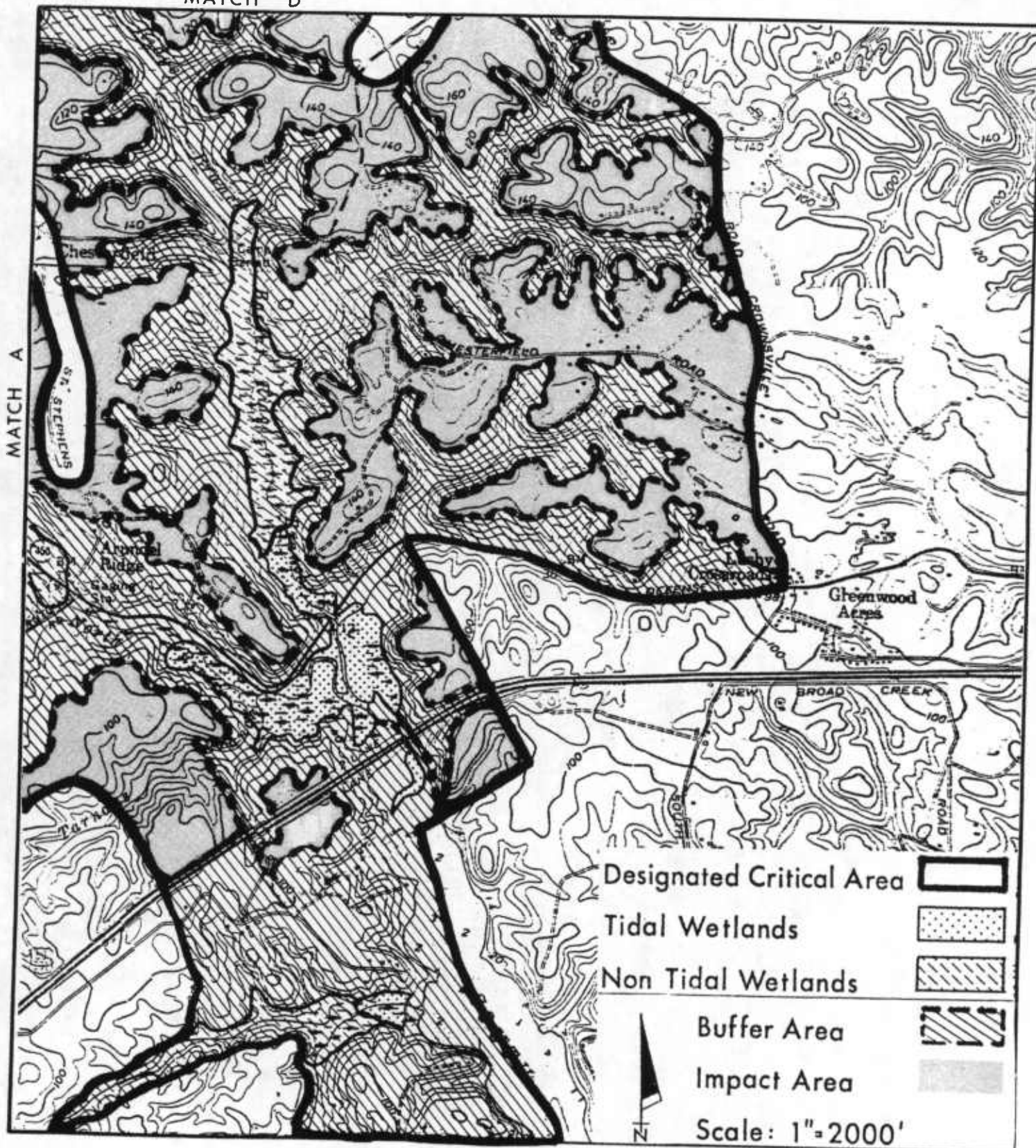
The design of I-97 in the South River area should be sensitive to the values of the Critical Area. Construction procedures should be planned to minimize disruption in the watershed. Strong erosion control and other mitigation measures should be designed and enforced. The Department of Transportation should work closely with the Department of Natural Resources, the Department of State Planning and Anne Arundel County as the project progresses.

AREAS OF CRITICAL STATE CONCERN

Site Name SOUTH RIVER HEADWATERS - TN4

County ANNE ARUNDEL Acreage 9,500 Date Designated JAN.1981

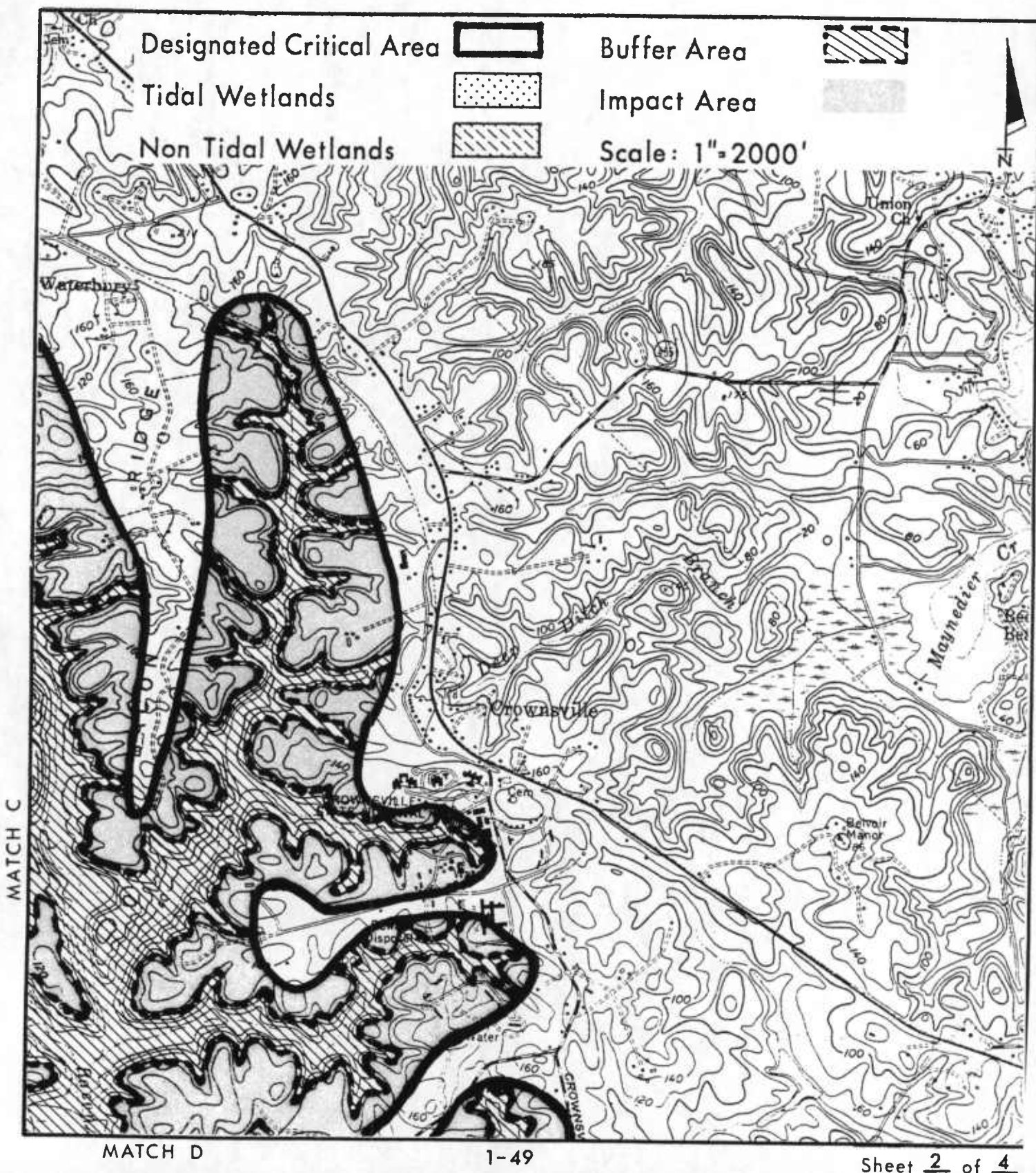
MATCH D



AREAS OF CRITICAL STATE CONCERN

Site Name SOUTH RIVER HEADWATERS - TN4

County ANNE ARUNDEL Acreage 9,500 Date Designated JAN. 1981

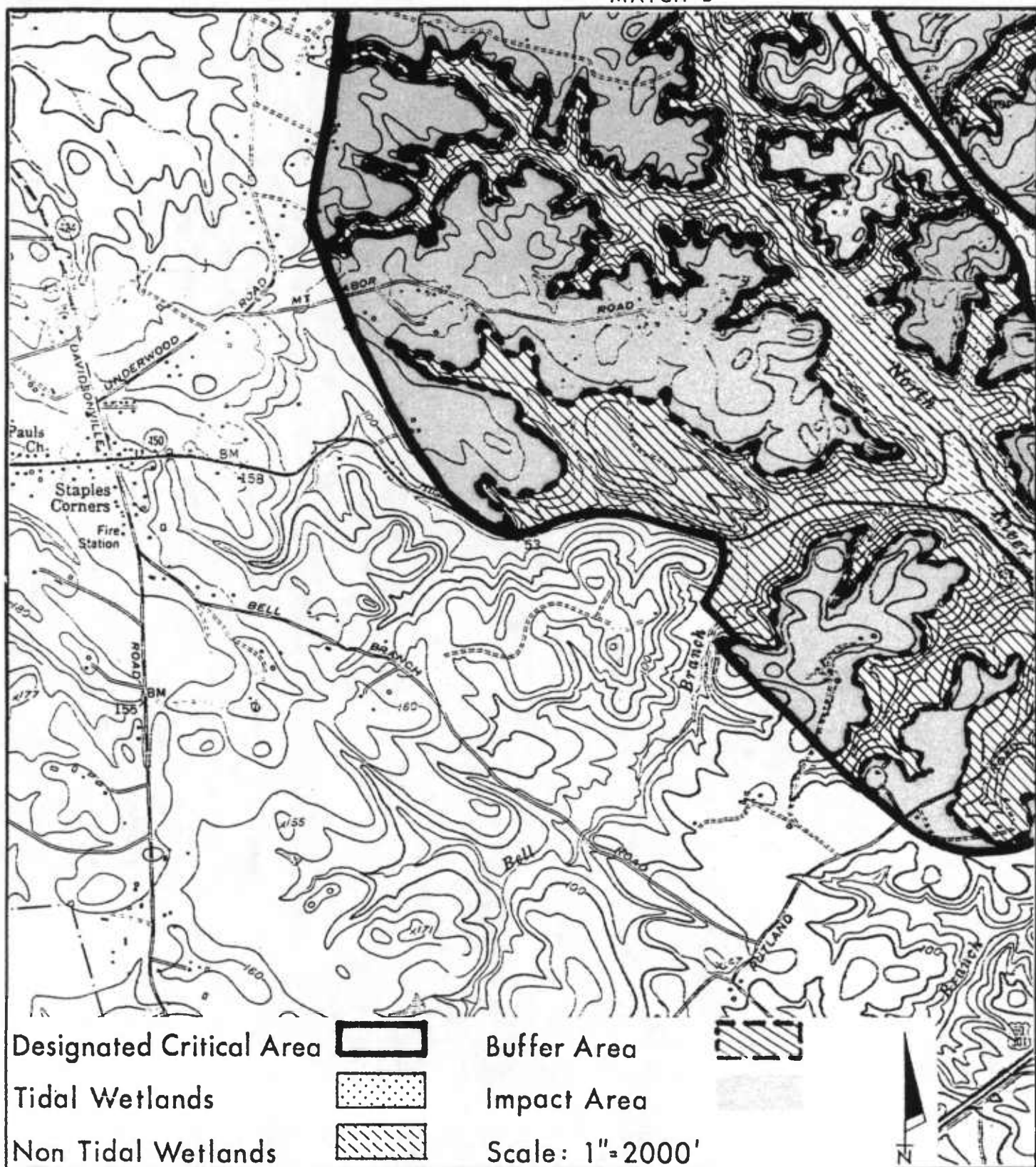


AREAS OF CRITICAL STATE CONCERN

Site Name SOUTH RIVER HEADWATERS - TN4

County ANNE ARUNDEL Acreage 9,500 Date Designated JAN.1981

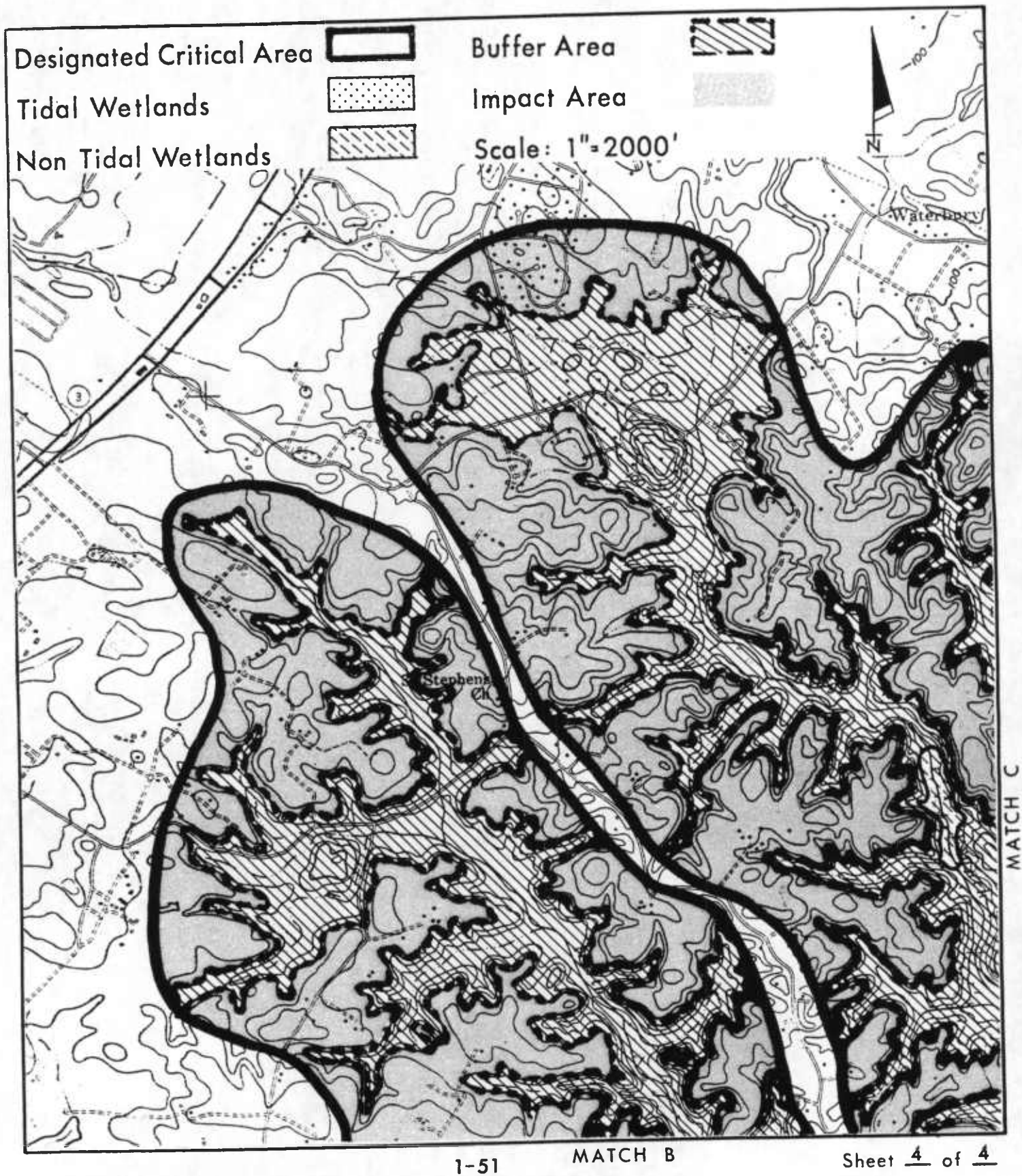
MATCH B



AREAS OF CRITICAL STATE CONCERN

Site Name SOUTH RIVER HEADWATERS - TN4

County ANNE ARUNDEL Acreage 9,500 Date Designated JAN.1981



ROUND BAY BOG

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 5

LOCATION:

Round Bay Bog is located in central Anne Arundel County, in a rugged area on the south shore of the Severn River. It is northeast of Crownsville, and is adjacent to Maynedier Creek, a small sub-estuary off of Round Bay.

AREA DESCRIPTION:

The site, approximately 90 acres in size, consists of a large shrub swamp surrounded by steep slopes covered by a mature upland hardwood forest. The bog, located in a transmission line right-of-way, contains a number of unusual plants growing out of a dense mat of sphagnum. Some unusual plants found include the rose pogonia orchid, Massachusetts fern, Virginia chain fern, and cranberry. Tree species found around the swamp include sweet gum, black gum, and red maple. Dominant shrubs are swamp azalea, sweetbay, and clethra.

The surrounding upland hardwood forest cloaks the rugged topography with beech, red oak and white oak, with some specimens measuring up to eighteen inches DBH (diameter breast height). The forest effectively buffers and protects the site, and supports a varied bird population as well.

OWNERSHIP PATTERNS:

Land ownership of Round Bay Bog consists of five individual properties.

CURRENT PLANS AND ZONING:

The Round Bay Bog and its impact area are zoned RA, Agricultural Residential District. This district permits, in addition to agricultural uses, low density

residential development. Each individual residential lot, however, must have a minimum net area of two acres. A portion of the wetland area adjacent to Maynedier Creek is zoned open space. The area around and including the bog is not planned to receive sewer and water service. Development can be supported only through on-site water and sanitary systems.

CONTINUING PLANNING AND STUDIES:

None

THREATS AND PROBLEMS:

Any herbicide spraying, grading, or drainage alterations, particularly in the Baltimore Gas and Electric Company powerline corridor could damage the bog.

MANAGEMENT:

Effective, long-term management of the Round Bay Bog is tied to the level of activity that can be accommodated within the impact area. Present zoning and public utility programs involving the Round Bay Bog would tend to reduce development impact. However, because of the sensitivity of this and similar bogs to any form of alteration, development, if it occurs, must proceed in a very controlled manner.

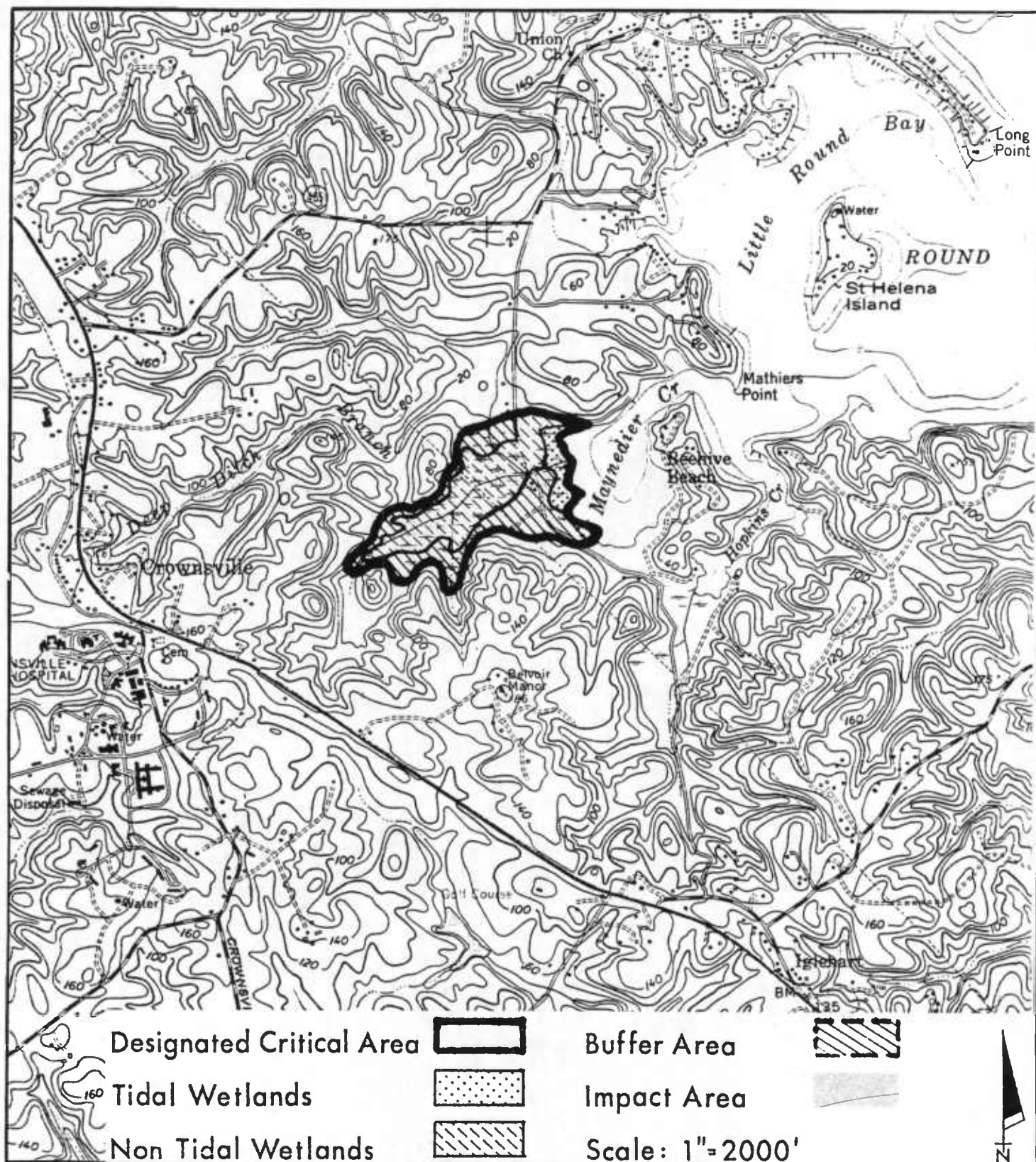
A long-term solution to management would be acquisition by the local government. However, utilizing management tools such as rezoning portions of the impact area to the Open Space Zone, restricting development near steep slopes and applying a management control plan similar to the one developed for the Eagle Hill Critical Areas, will contribute to protection of the bog.

Baltimore Gas and Electric's management measures for the powerline that runs through the critical area should be reviewed for compatibility with preservation of the bog. The Department of State Planning should consider negotiating an agreement with the Baltimore Gas and Electric for management of this portion of the powerline corridor.

AREAS OF CRITICAL STATE CONCERN

Site Name ROUND BAY BOG - TN5

County ANNE ARUNDEL Acreage 90 Date Designated JAN.1981



GUNPOWDER DELTA MARSH/DAY'S COVE

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 6

LOCATION:

The Gunpowder Delta Marsh/Day's Cove is located at the confluence of the Gunpowder Falls and the Little Gunpowder Falls within the Gunpowder River estuary in Baltimore and Harford Counties, southwest of the community of Joppatowne.

AREA DESCRIPTION:

The Gunpowder Delta Marsh/Day's Cove designated area includes 1,350 acres of prime tidal and non-tidal wetlands and upland hardwood forests, providing a natural setting unsurpassed on the western shores of the Chesapeake Bay. The Delta is relatively undisturbed although portions along the Gunpowder and Little Gunpowder Falls are currently being excavated for sand and gravel resources. In addition, a small portion along the Gunpowder Falls has been disturbed by professional and amateur archeologists in search of Indian relics.

The remainder of the Delta is in a diverse natural state, characterized by stages of transition from floodplain to shrub swamp and tidal marsh. Green ash and sycamore are dominant in the higher floodplain with DBH's up to 18 inches. Little manmade disturbance is found here. The area grades into shrub swamp where willow and other wetland shrubs increase in importance. Portions of this area contain many standing dead trees, probably killed as a result of flooding. The adjacent tidal marshes are extensive and scenic. They include such species as cattails, typha, marsh fern, smart-weeds, marshmallow, grasses, rushes, and sedges. The natural area and adjacent tidal marshes provide important habitat for birds and probably include significant spawning areas for aquatic life. The area is scenic although not easily accessible by land.

OWNERSHIP PATTERNS:

The Gunpowder Delta Marsh/Day's Cove is currently under multiple private ownership. Approximately 92 percent of the area is controlled by mining interests. The State has plans to acquire most of the Delta as part of the Gunpowder State Park.

CURRENT PLANS AND ZONING:

The portion of the Delta which is located in Baltimore County is zoned Resource Conservation 2. The RC-2 classification is intended to protect productive agricultural lands and wetlands associated with the Chesapeake Bay and its tributaries. Various low intensity land uses are permitted as a matter of right. Certain uses allowed by special exception, however, such as mineral excavation or landfills, have potential to adversely affect the wetlands and water quality of the Delta.

The Harford County portion of the Delta is primarily zoned A-1 (Agriculture); there is also a B-3 (Commercial) district, situated in the northern-most reaches of the Delta, between Joppatowne and the Little Gunpowder Falls. The current zoning permits development activities of a type and intensity that may have negative impacts on the Delta, mostly related to sedimentation and stormwater runoff.

The Baltimore County Water and Sewer Plan indicates that the Delta is in the "no planned service" category for sewer and water. Land abutting the northwest edge of the Delta is in the S/W-6 category (service in 11 to 30 years). The Harford County Water and Sewer Plan places the Delta in the "no planned service" category for water and sewer. Existing and planned water and sewer service abut the Delta on the eastern edge, in Joppatowne.

CONTINUING PLANNING AND STUDIES:

The Gunpowder Delta Marsh/Day's Cove area has been studied by State and local governments as well as private institutions. The area was mapped and its plant and animal life inventoried by the Smithsonian Institution's Center for Natural Areas in conjunction with the Department of State Planning. The

Coastal Zone Management Program of the Department of Natural Resources has conducted further environmental research in the Delta as part of the Uplands Natural Area project, and has also contracted with the Johns Hopkins University to study the impacts of residential development in the area. Current planning efforts include the State's park planning for the future Day's Cove section of the Gunpowder State Park, and Maryland Geological Survey's examination of the Delta with respect to the extent and quality of its mineral resources.

THREATS AND PROBLEMS:

The single most important issue regarding protection of the wetlands, water quality, and scenic beauty of the Gunpowder Delta Marsh/Day's Cove area is the presence of mineral resources along the Gunpowder and Little Gunpowder Falls. As previously noted, about 92 percent of the Delta is owned by mining interests. This situation creates a basic conflict between preservation and the demand for building materials in proximity to the Baltimore metropolitan area.

MANAGEMENT:

Because of the Delta's scenic beauty and ecological importance, it is necessary to establish land management tools regarding the protection of these attributes which would also allow a reasonable scale of mining activity to occur. Although excavation of some of the wetlands has happened in the past, it should not be permitted in the future. The wetlands act as a cleansing system, removing sediment and other pollutants from the water before they reach the Chesapeake Bay. Mineral excavation should therefore be allowed only in areas of the Delta where significant wetlands will not be damaged or destroyed. Mining activities within the 100-year floodplain should be permitted if they can be conditioned to prevent any increases in sediment flow into the wetlands. Mining sites should be required to have adequate buffer land between the floodplains and adjacent wetlands. The mineral operations should be conditioned so as to prevent any increases in the existing sediment load, including careful evaluation of adverse impacts that might result from flood surges in the Gunpowder system.

As most of the Delta will eventually be purchased by the State as part of the Gunpowder State Park, it is also necessary to require reclamation of all excavated areas to a shape that is clearly compatible with the intended use of the property as reflected by the State's current park plans.

In addition, the State and Harford and Baltimore Counties should coordinate their respective permitting authorities to the fullest extent practicable so as to maximize preservation of the wetlands and adjoining floodplains.

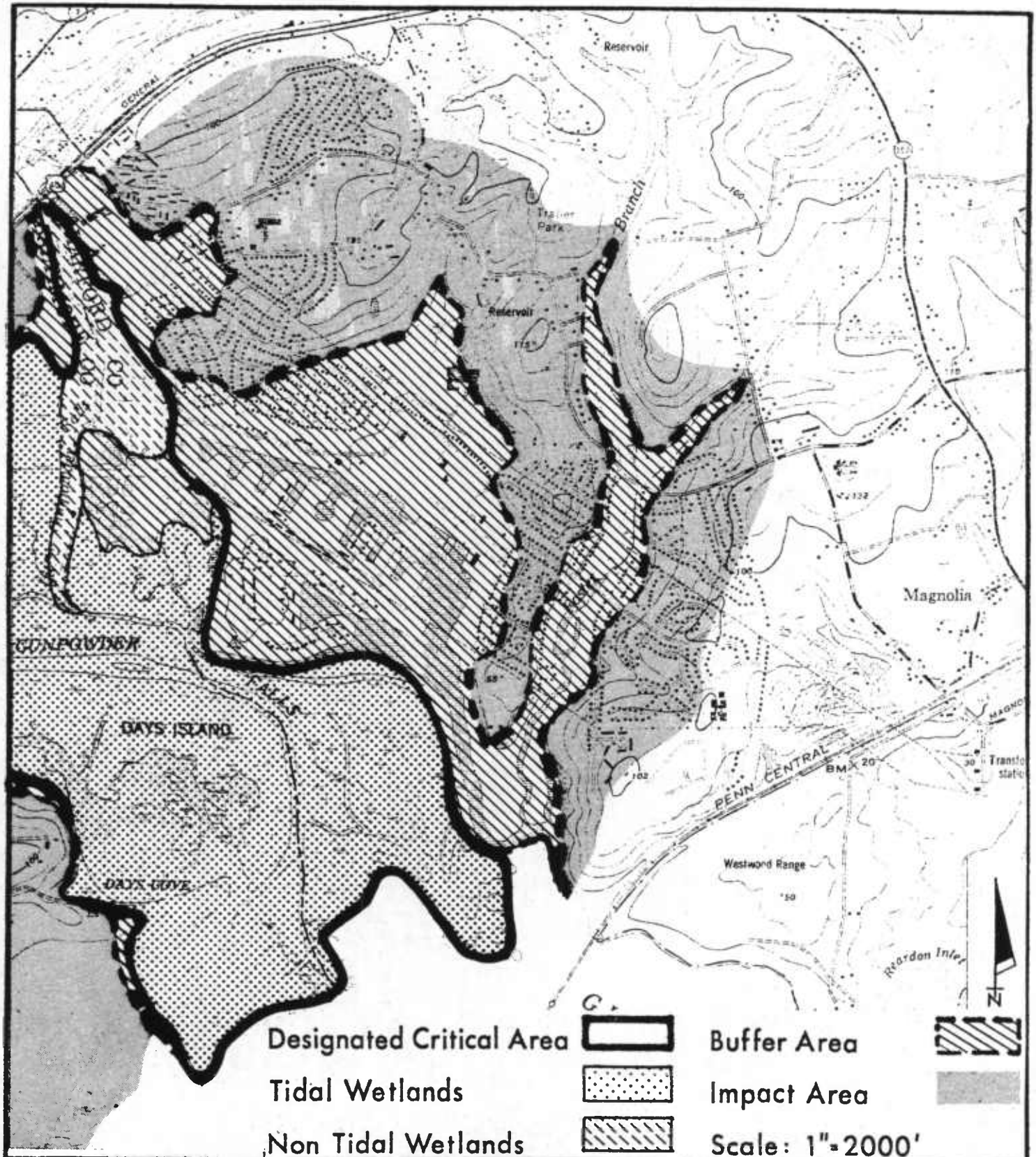
The Delta should be additionally protected by establishing an adequate buffer area (approximately 600 feet wide) wherein all development will be strictly controlled. Clearing of significant wooded areas and development on steep slopes (over 15 percent) or in the 100-year floodplain should be prohibited. All other development in the buffer area should be of low intensity and should include adequate stormwater runoff and sediment controls.

The impact area, formed by lands adjoining the Delta, as well as the shore areas of both the Gunpowder and Little Gunpowder Falls, should be developed with careful attention to sediment control, stormwater runoff, and preservation of steep slopes. Improper utilization of the impact area in the past, as well as insufficient controls upon existing mining operations in the Delta itself, have deteriorated the water quality and strained the continued purifying function of the wetlands.

AREAS OF CRITICAL STATE CONCERN

Site Name GUNPOWDER DELTA MARSH / DAY'S COVE - TN6

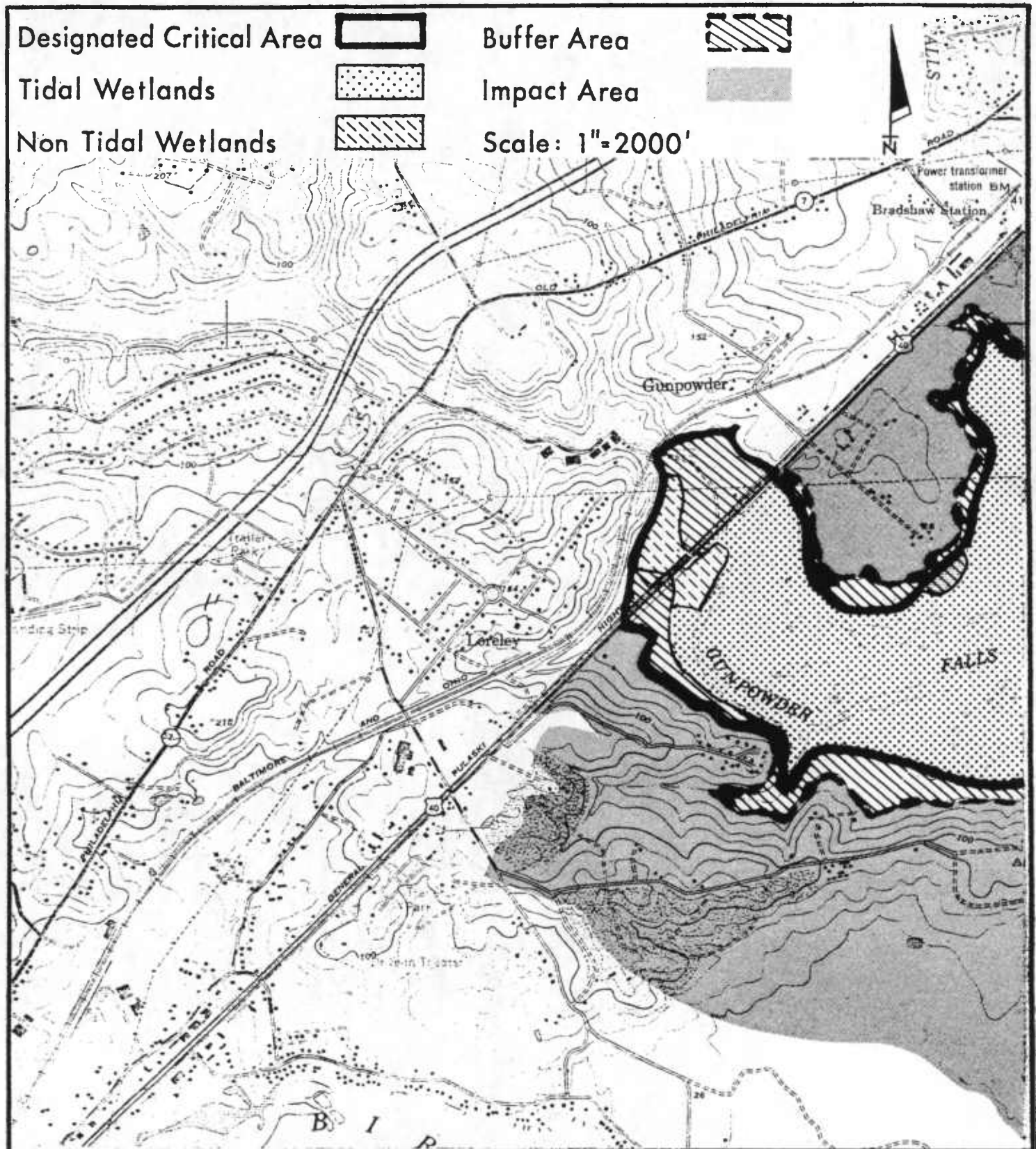
County BALTIMORE & HARFORD Acreage 1,350 Date Designated JAN.1981



AREAS OF CRITICAL STATE CONCERN

Site Name GUNPOWDER DELTA MARSH / DAY'S COVE -TN6

County BALTIMORE & HARFORD Acreage 1,350 Date Designated JAN.1981



ZEKIAH SWAMP

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 7

LOCATION:

Zekiah Swamp is located in Charles County but the drainage area originates in southern Prince George's County. The Swamp bisects Charles County approximately 4.5 miles east of U.S. Rte. 301 and is accessible from many points, most notably Maryland Routes 5, 6, 235 and 302, as well as numerous minor roads. Gilbert Run/Newport Run adjoins Zekiah Swamp to the east. The drainage area proceeds northeast, parallel to Zekiah Swamp, to its headwaters near Hughesville.

AREA DESCRIPTION:

The Zekiah Swamp is the largest natural hardwood swamp in Maryland. It is approximately 20 miles long, and averages .75 miles wide from Cedarville Natural Resources Management Area in the north to the Wicomico River in the south. The designated area includes the wetlands and floodplains of Zekiah Swamp and the headwaters drainage area. The latter should be managed as a buffer area, in accord with the definition on page 1-8. Zekiah Swamp was described in a major study undertaken by the Smithsonian Institution, as one of the most important remaining ecological areas on the East Coast receiving the highest rating of all natural areas in the Chesapeake Bay region. The area is a prime wildlife habitat for such species as beaver, mink, osprey, herons, wood duck, Maryland Diamondback Terrapin, and overwintering Wilson's snipe and for such rare species as the bald eagle, redbellied woodpecker, and Zekiah stonefly. It contains large stands of mature hardwoods and other timber.

Gilbert Run has been channelized from a point not far below the Maryland Route 234 bridge. The wetlands which were above this point no longer exist.

OWNERSHIP PATTERNS:

The Cedarville Natural Resources Management Area, which lies in the northern portion of Zekiah Swamp's watershed, is under the ownership and control of the Maryland Department of Natural Resources. The remainder of the Swamp and its watershed is under multiple private ownership.

CURRENT PLANS AND ZONING:

All of the Zekiah drainage basin, which lies in Prince George's County, is zoned O-S, a 5 acre minimum lot size.

All of the drainage basin in Charles County is zoned for residential use, except for the 6,000 plus acres of St. Charles New Town which lies in the basin and which is a Planned Unit Development (PUD). Practically all of the eastern portion of the basin is zoned R-3, the Rural and Agricultural zone. This is the least dense zoning district in the County's zoning ordinance and requires 3 acres per dwelling. The western portion of the basin is a combination of the County's other zoning districts - R-2, R-1, R-30, R-15 and PUD. They require respectively, net lot sizes of 2 acres, 1 acre, 30,000 square feet, and 15,000 square feet.

The majority of the land lying in the Zekiah Swamp has been placed in very low priority service categories for water and sewerage systems. That portion of the Zekiah which lies within Prince George's County is in the W-6 and S-6 service areas. No service is planned within ten years and any development must be supported with on site systems.

The vast majority of the drainage basin in Charles County is also in a no planned water and sewerage service category except for the following:

1. The Waldorf-St. Charles area in the northwestern portion of the basin, and the Town of LaPlata are in the W-1 and S-1 categories, indicating that service currently exists.

2. A small area east of LaPlata and the Hughesville area have water and sewer planned for the 6 to 10 year category.
3. The Southern Maryland Correctional Institution at Hughesville operates a small wastewater system with a discharge into Gilbert Run.

CONTINUING PLANNING AND STUDIES:

There are no plans or studies currently underway in the designated area. However, a discharge permit was recently issued to St. Charles to continue the spray irrigation of sewage effluent on a new site in the drainage basin east of the Swamp. The permit allows spraying of 700,000 gallons per day at the rate of 1 inch per acre per week. A geohydrologic study was conducted as part of the application for the permit. Continuing studies of the ground and surface water in the area will occur to monitor the adequacy of this system and to determine whether a discharge of 1.2 million gallons per day will be permitted in the future.

It should be noted that St. Charles had operated a 1.2 mgd spray irrigation system from 1965 until June 1980 at a location adjacent to the proposed site. The Charles County Health Department had studied bacteriological impacts from the previous spray irrigation operation, and the University of Maryland had studied phosphorus and nitrogen impacts over a three year period.

THREATS AND PROBLEMS:

The Zekiah may be damaged with only minor environmental changes in its vicinity.

Of concern is the proper operation of the sewage effluent spray irrigation system at St. Charles. The system serves that portion of St. Charles new town which is in the Zekiah Basin. Wastewater generated by additional growth in St. Charles above the permitted flows will be treated at the Mattawoman Sewage Treatment Plant.

Development in this basin made possible by the availability of sewage treatment capacity at the Mattawoman and Zekiah facilities represents a

potential threat to water quality, as land is disturbed during construction, and as urban land uses replace current vegetative cover.

In the Prince George's County portion of the basin, there are occasional applications for sand and gravel washing operations. These operations require a special exception in the O-S zone, and concern over a proposed operation could be addressed during the special exception permit process.

MANAGEMENT:

The Office of Environmental Programs plans to closely monitor the operation of the sewage spray irrigation system and the impact of its operation on ground and surface water conditions. These activities are important to the protection of this Critical Area.

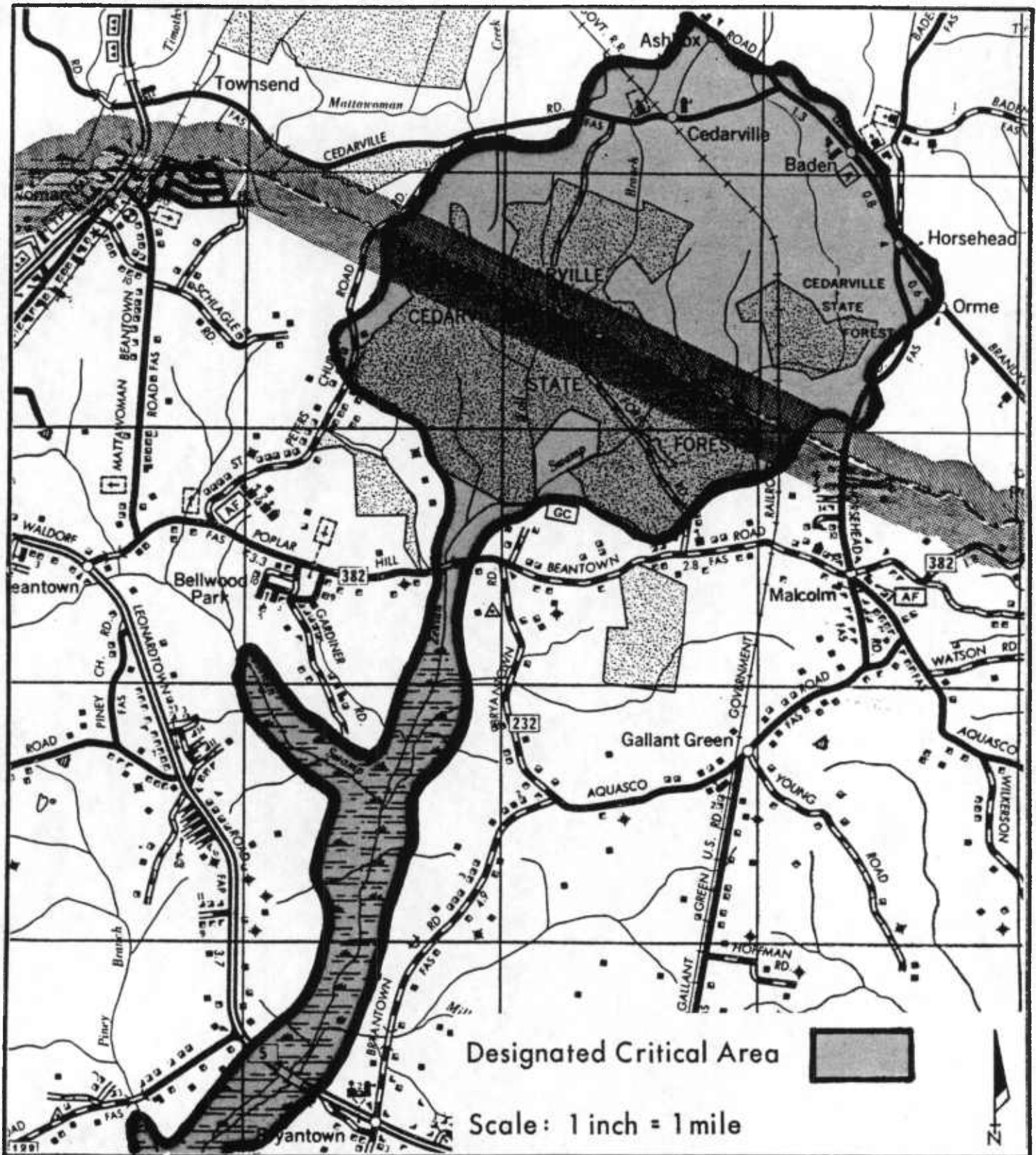
Management of the nonpoint source pollution is also essential to maintaining the environmental quality of Zekiah Swamp. Implementation of existing programs such as sediment and erosion control, the Soil Conservation Service Farm Management Plans program, the nonpoint source recommendations of the 208 Plan for the Lower Potomac River Basin, and the Charles and Prince George's Counties Water and Sewer Plans should be vigorously pursued with the objective of protecting Zekiah Swamp.

Long term management would involve the State's acquisition of land for the Zekiah Natural Environment Area. The County should evaluate whether rezoning would make a contribution to improving protection of the Swamp and its drainage area.

AREAS OF CRITICAL STATE CONCERN

Site Name ZEKIAH SWAMP - TN7

County CHARLES & PRINCE Acreage 17,800 Date Designated JAN.1981
GEORGE'S

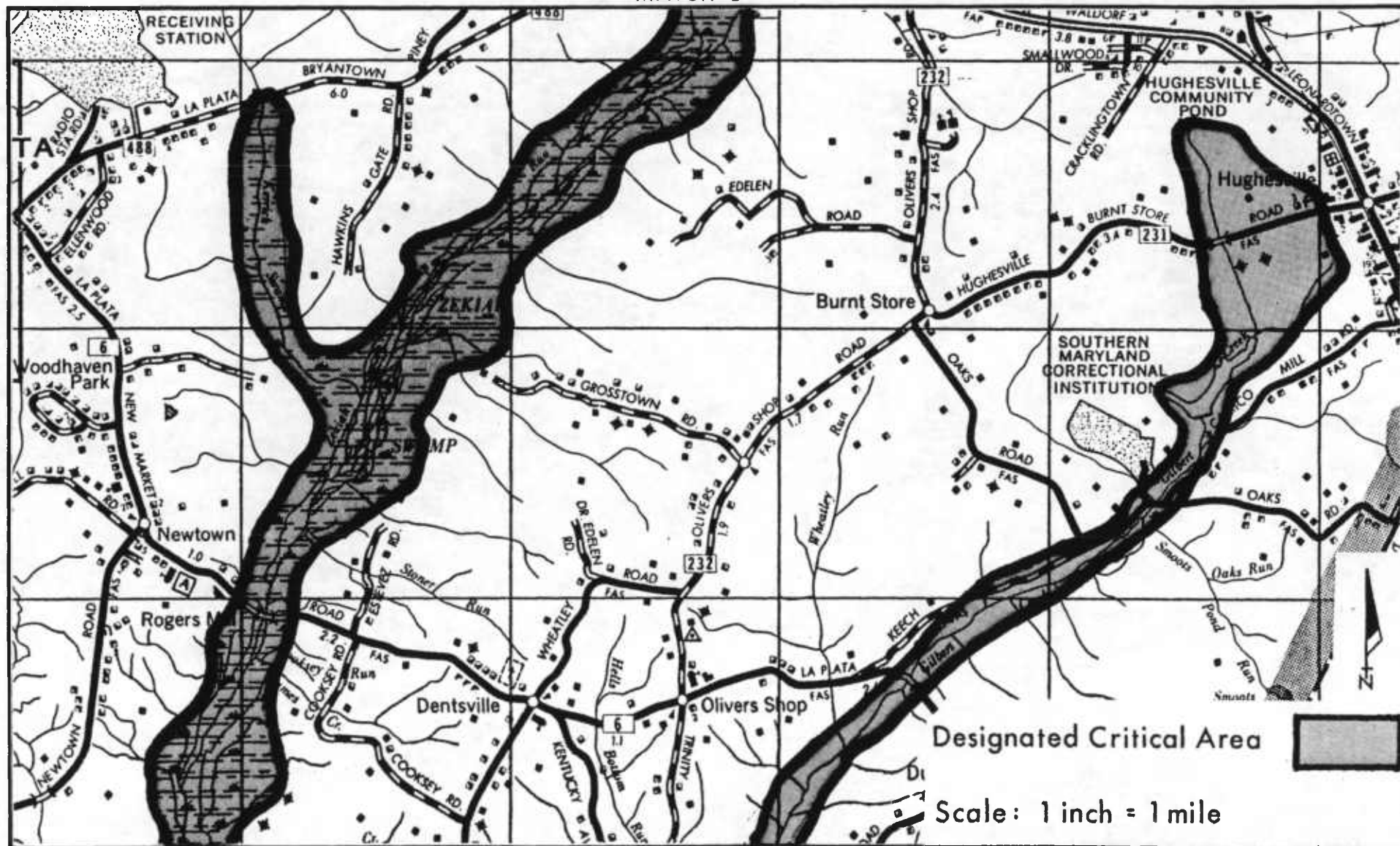


AREAS OF CRITICAL STATE CONCERN

Site Name ZEKIAH SWAMP - TN7

County CHARLES & PRINCE GEORGE'S Acreage 17,800 Date Designated JAN. 1981

MATCH B



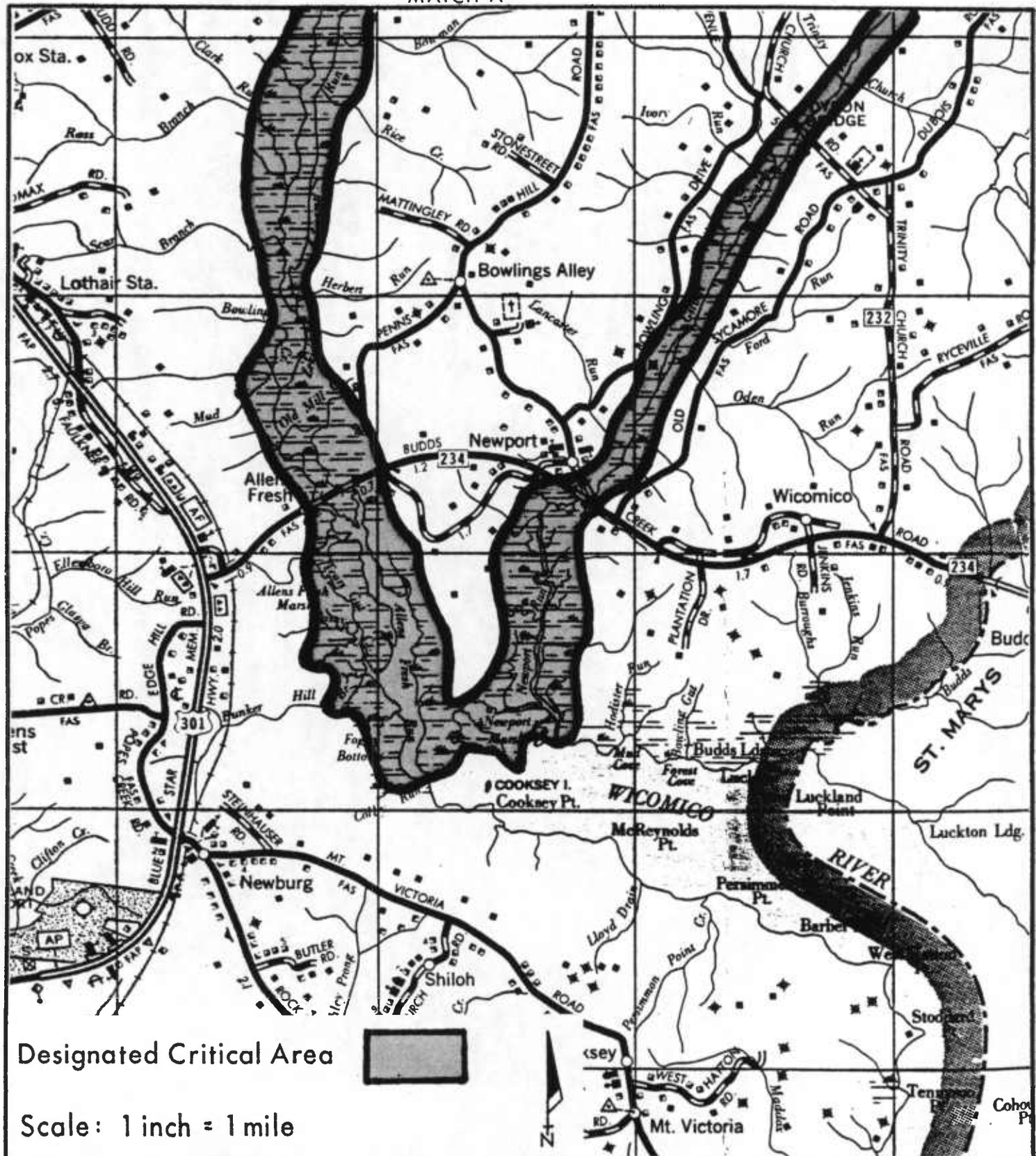
MATCH A

AREAS OF CRITICAL STATE CONCERN

Site Name ZEKIAH SWAMP TN7

County CHARLES & PRINCE Acreage 17,800 Date Designated JAN.1981
GEORGE'S

MATCH A



MATTAWOMAN CREEK

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 8

LOCATION:

The Mattawoman Creek rises in Prince George's County north of the U.S. Military reservation near Brandywine Road, extends along the Prince George's and Charles County boundary from Rt. 301 west to Billingsley Road, swings south between Maryland Airport and Myrtle Grove Wildlife Refuge and empties into the Potomac River.

AREA DESCRIPTION:

Mattawoman Creek is a swamp forest/stream valley area which drains both southern Prince George's and northern Charles Counties. It also runs through portions of Myrtle Grove Wildlife Management Area and Smallwood State Park. The designated area includes the flood plains and wetlands of Mattawoman Creek.

The Creek and its tributaries are among the most important of the Potomac Basin spawning waters. The tidal wetlands are essential nursery areas for many species of fish. The wetland areas support unusually large numbers of fish-eating wildlife, especially Great Blue Herons, Common Egrets, and Black-Crowned Night Herons. A small Great Blue Heron nesting area is located in the upstream floodplain forest. The tidal wetlands contain the rare native lotus, *nelumbo lutea* and *aneilema keisak* (wild rice). Otter, mink, osprey, and beaver, as well the largest concentration of nesting wood duck in Maryland, are found here.

OWNERSHIP PATTERNS

Most of the wetland and surrounding area east of Billingsley Road in Charles County lies in multiple private ownership. West of Billingsley Road, a 3,060 acre strip of land along the Mattawoman Creek has been designated by the Department of Natural Resources as a Natural Environmental Area. To date, the State has purchased 1,887 acres and acquired easement to 60 more. Most of this land is concentrated at the mouth of the Creek near Indian Head where there is a large concentration of wetlands. The State has also purchased the Myrtle Grove Wildlife Refuge which borders the Creek and Maryland Rt. 295. While much of the Natural Environmental Area still lies in private ownership, the State will continue to purchase sensitive wetland areas.

CURRENT PLANS AND ZONING:

Zoning in the Prince George's portion of the Mattawoman Creek reflects a desire for low density rural development. The land on this side is zoned R-A (Residential/Agricultural) allowing two acre lots and O-S (Open Space) requiring five acre lots. In Charles County, large portions of land around Berry Road near Waldorf are zoned in categories such as R-2 and R-15, allowing two and three units per acre respectively. This residential zoning extends westward along the Creek toward its juncture with the Potomac River.

The Prince George's County Water and Sewerage Plan indicates that for the most part, these facilities will not be provided along the Mattawoman shoreline or the areas immediately adjacent. An exception is the area near the Mattawoman town center which borders the west side of Rt. 301 and Mattawoman Creek. The town center and vicinity have large areas scheduled for water and sewerage service within one to two years, 3 to 6 years, and 7 to 10 years. The County has an agreement with Charles County to utilize one million gallons of the five million gallon capacity Mattawoman Treatment Plant.

The Charles County Water and Sewerage Plan reflects the greater development pressures within that County's portion of the Mattawoman Watershed. Most

of the Waldorf area is served or will be served by community water and sewerage facilities within 3 to 5 years. Sewerage service will be available in 3 to 5 years along the Mattawoman from Waldorf to Indian Head Road.

The Mattawoman Sewage Treatment Plant discharges into Mattawoman Creek at its juncture with the Potomac River.

CONTINUING PLANNING AND STUDIES:

The County is currently conducting a 201 Facilities Planning effort for the Mattawoman area.

THREATS AND PROBLEMS:

Danger to the wetlands, wildlife habitats, and spawning areas results from runoff and sedimentation from increasing development in the drainage area. Development in the wetlands themselves would destroy this valuable ecosystem.

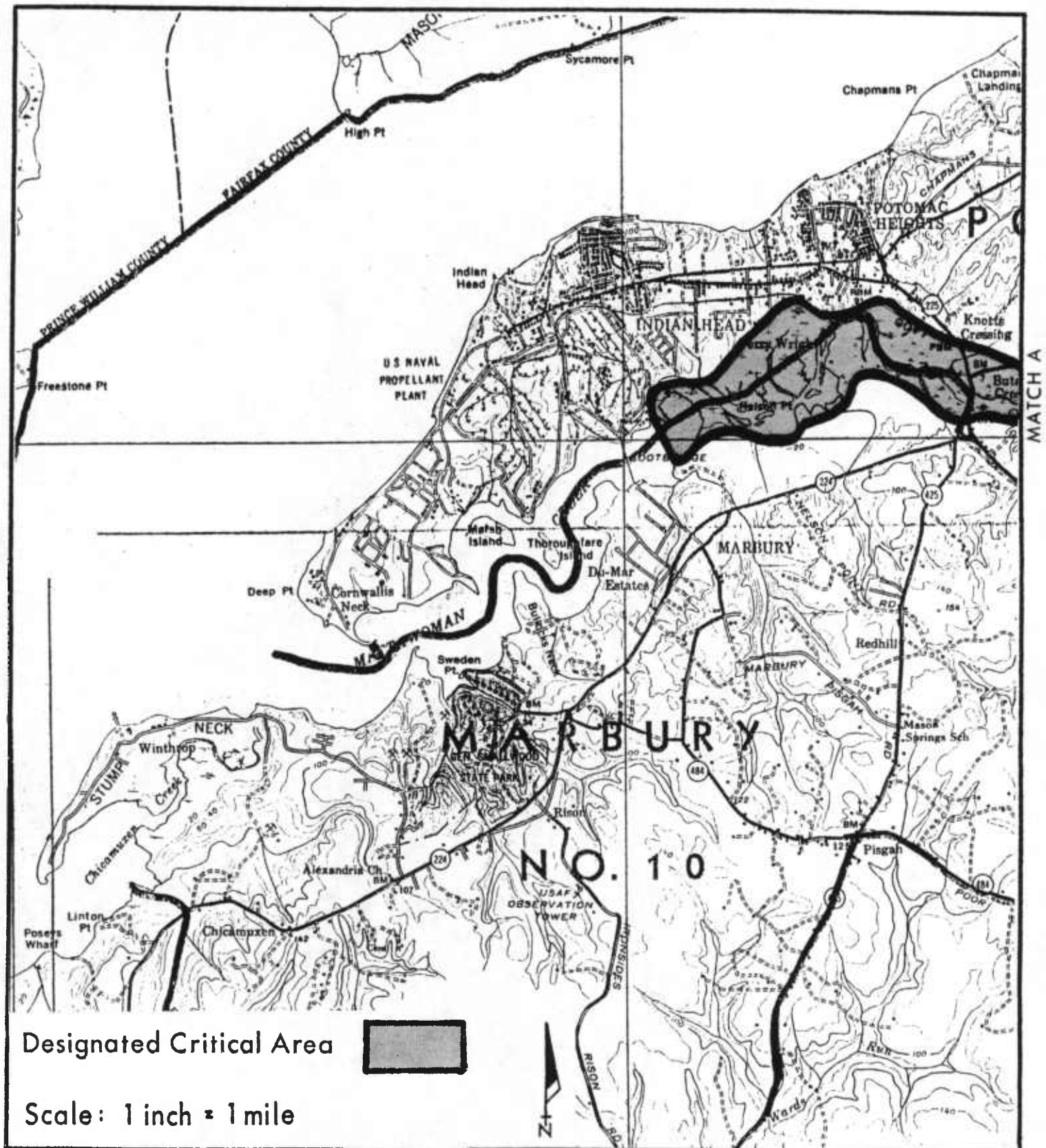
MANAGEMENT:

Outright purchase of sensitive wetlands and purchase of conservation easements in the natural environmental area represents a long-term strategy for preserving these wetlands. Within the impact areas sedimentation and runoff controls must be utilized to prevent siltation of the streams and wetlands. This is particularly important in Charles County because of the high potential for development along the banks of the Creek near Waldorf and points to the west.

AREAS OF CRITICAL STATE CONCERN

Site Name MATTAWOMAN CREEK - TN8

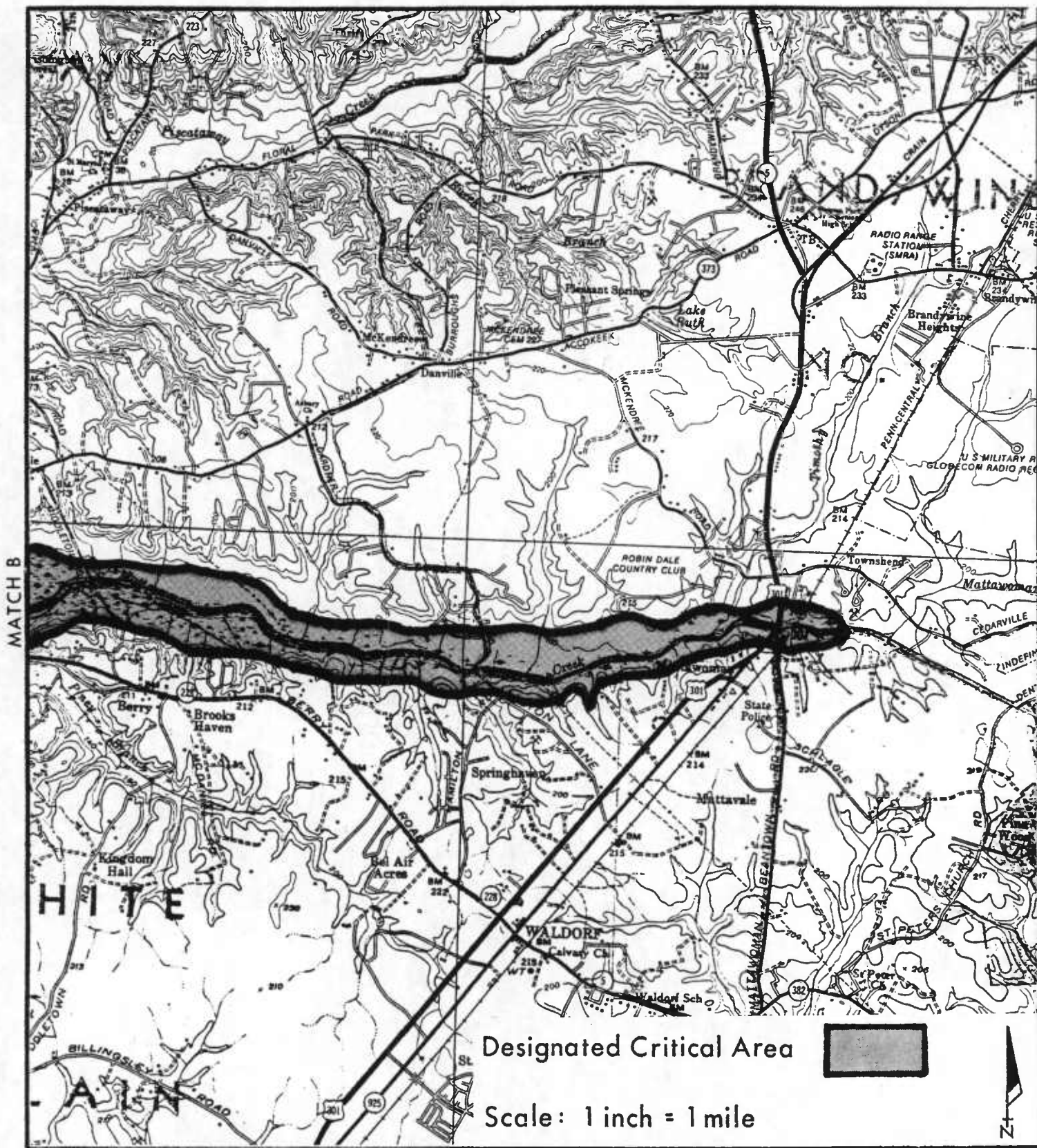
County CHARLES & PRINCE GEORGE'S Acreage 6,000 Date Designated JAN.1981



AREAS OF CRITICAL STATE CONCERN

Site Name MATTAWOMAN CREEK-TN8

County CHARLES & PRINCE GEORGE'S Acreage 6,000 Date Designated JAN. 1981



BIG MARSH/HOWELL POINT

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 9

LOCATION:

Big Marsh/Howell Point is located in the north central part of Kent County at the entrance to the Sassafras River. The area is bounded on the west by the Chesapeake Bay. The Sassafras bends away to the east beginning at Howell Point. The marsh begins at the Bay southwest of the point and extends in a southeast direction for approximately 1½ miles.

AREA DESCRIPTION:

Big Marsh at Howell Point is a 850 acre shrub swamp and upland forest. About 30 percent of the site is an undisturbed shrub swamp wetland. Water stands in the swamp year-round, averaging six inches deep. The red maple, which are up to twenty feet high, sweet bay and alder grow on small hummocks of organic litter. Saggitaria grows in the water where sunlight penetrates. Size and difficulty of passage make this wetland a good nesting site for birds and a refuge for small game animals. The swamp has a tidal influence at times of extreme high water in the Bay, although only the first 3,000 feet from the Bay shoreline is classified tidal under the State Wetlands Law. A small, dark-colored stream flows across the beach where the site borders the Bay. Over half the area is an upland, lower slope woods of tulip, poplar, chestnut, oak, beech, and hickory. These upland woods are in various stages of post-agricultural growth. Few mature trees are present, and logging slash is frequent. Most of the woods have been selectively cut. Several steep, wooded bluffs border the swamp providing occasional vistas. About 45 acres

of the swamp have been mined for peat. The extraction of peat has ceased, leaving a series of deep-water trenches with linear islands of mining waste now covered with red maple, willow, and sumac. The open water has a small fringe of fragrant water lilly. A smaller 16 acre area east of the mining operation is covered by phragmites and cattail, indicating prior disturbance. A small red willow-maple shrub creek floodplain flows into the swamp near the lower southeast corner. A nine-acre pond is located at the confluence of the stream and marsh. A summer camp to the northwest uses the swamp for recreation and education.

OWNERSHIP PATTERNS:

The area is generally divided into relatively small parcels with more than fifty owners.

CURRENT PLANS AND ZONING:

The zoning in and around the site is diverse. It ranges from an agricultural zone through low density residential, with an industrial zone designed for marine uses fronting the Bay just to the south of Howell Point. Lot size varies according to the zone but are one-half acre or larger.

There is no planned service for either water or sewerage in the area. On-site facilities are the only alternative.

CONTINUING PLANNING AND STUDIES:

The Department of Natural Resources has been conducting field studies of the marsh vegetation structure and hydrological processes to determine the best marsh restoration process for the area. The results of this study will be applied to future freshwater marsh restoration projects.

THREATS AND PROBLEMS:

Aside from the normal pattern of gradual development in Kent County, there are no direct threats to the site.

MANAGEMENT:

Although the nearby industrial zoning in the area would seem to support reasonably dense development, the very remoteness of the site, plus the general unsuitability of soils and terrain make intensive use unlikely. The protection afforded by the wetlands, sediment control, and floodplain legislation seems to be adequate at this time. However, close attention must be paid to future development proposals. Local zoning of this area might be reviewed in light of this designation. The Department of Natural Resources is negotiating with the Echo Hill Outdoor School and other private property owners for State acquisition of the Marsh. The Chesapeake Bay Foundation, in cooperation with the State, will develop a management program for the area.

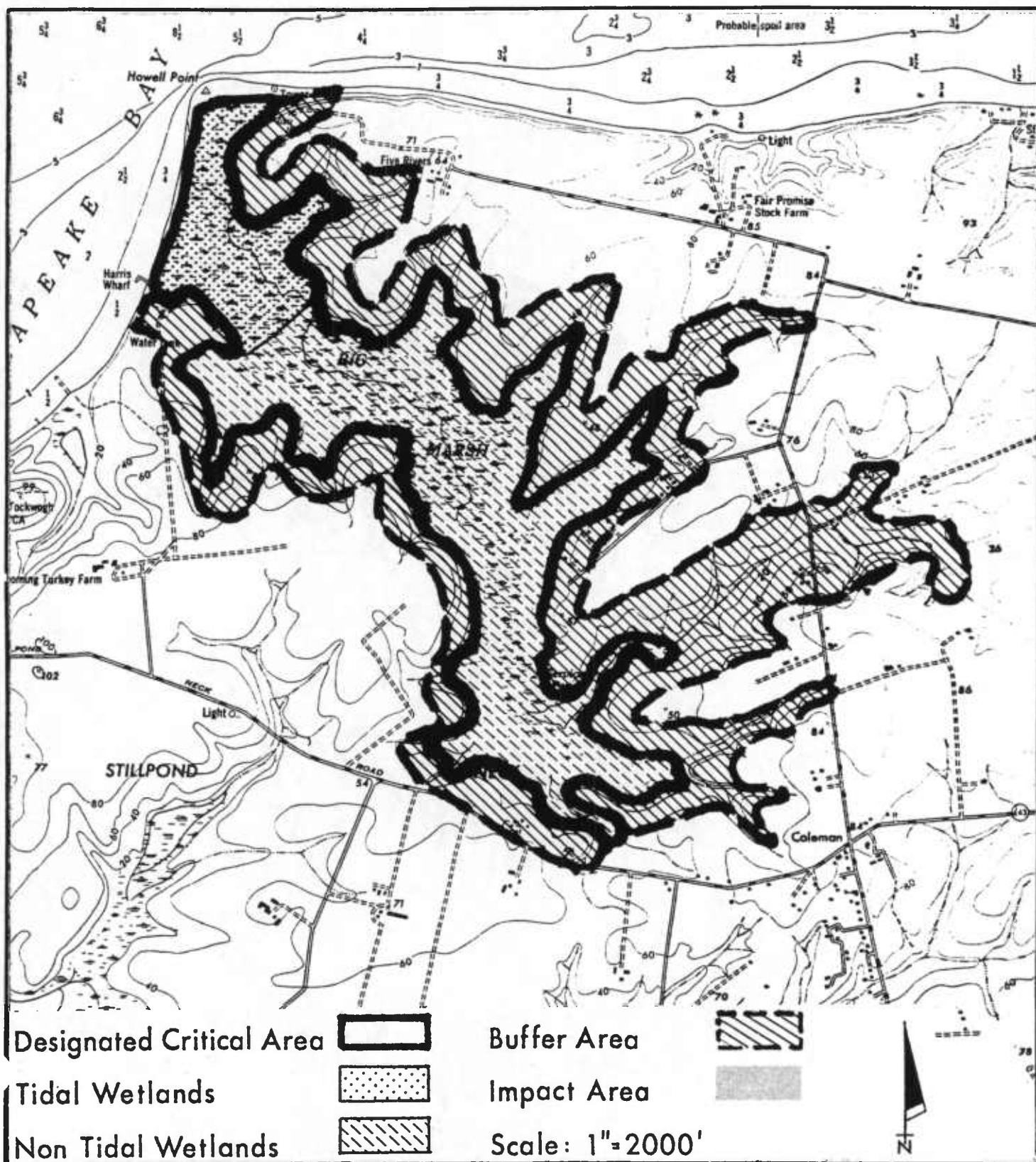
AREAS OF CRITICAL STATE CONCERN

Site Name BIG MARSH/HOWELL POINT - TN9

County KENT

Acreage 850

Date Designated JAN.1981



BROAD-HENSON CREEK MARSH

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 10

LOCATION:

This wetland area is located in the southwestern portion of Prince George's County at the mouth of Broad Creek and Henson Creek. It is bounded on the east by Livingston Road, and on the north by Oxon Hill Road. The southern boundary is the lower shore of Broad Creek which opens into the Potomac River.

AREA DESCRIPTION:

The critical area encompasses both tidal and non-tidal wetlands. The Smithsonian Institution considers these wetlands to be a prime wildlife habitat and calls for their preservation. This ecosystem includes 50 acres of fresh water, non-tidal, shrub swamp and 30 acres of coastal, tidal shallow, fresh water marsh. It provides significant habitat for muskrat, opossum, fox, rabbit and deer. In addition, anadromous fish frequently spawn in the lower reaches of these Creeks and their tributaries. The area also offers a scenic view of the Potomac River.

The overall Henson Creek Watershed system extends northeast toward Pennsylvania Avenue, east toward Allentown Road, and southwest toward Oxon Hill Road. Both the Maryland-National Capital Park and Planning Commission and the federal government, recognizing the ecological importance of this watershed, have purchased large portions of the land along its waterways for parks.

OWNERSHIP PATTERNS:

The majority of the land lying within the critical area is publicly owned. The federal government owns over 62 acres, including much tidal wetland, at the mouth of Broad and Henson Creeks. Another large wetland parcel of roughly 96 acres owned by Maryland-National Capital Park and Planning Commission lies to the northeast. Maryland-National Capital Park and Planning Commission also owns several smaller parcels on the southern shore of Broad Creek. Other parcels lying within the critical area, including several large ones, are in private ownership.

CURRENT PLANS AND ZONING:

Virtually the entire area is zoned R-R, a low-density residential category allowing two units per acre. The County will consider rezoning this site as a conservation area. The comprehensive rezoning of this area is scheduled to be completed in FY 1982.

The wetlands and most of the surrounding area are not scheduled for water and sewerage service for at least 7 to 10 years.

The upper two-thirds of the Henson Creek Watershed has large areas which currently have water and sewer service, and which are scheduled for service in the near future.

CONTINUING PLANNING AND STUDIES:

The County will soon initiate a study of the Henson Creek Watershed to ascertain the severity of flooding, erosion, and other environmental problems. County staff will then develop a plan for correction and abatement of these problems.

THREATS AND PROBLEMS:

As development has increased in the northern two-thirds of the Broad/Henson Creek Watershed near Andrews Air Force Base, Suitland and I-495,

flooding and siltation problems have worsened downstream. The fragile wetlands and indiginous wildlife at the mouth of the Broad and Henson Creeks are threatened by sedimentation. Severe and increasing problems can be expected in the future as upstream development continues.

MANAGEMENT:

It is recommended that further public acquisition of land and development rights be utilized to pre-empt development near the wetlands although funding may be uncertain at this time. Use of mandatory dedication provisions in the County subdivision ordinance are also a viable management tool both in the wetlands themselves and in adjacent areas where construction would create sedimentation problems.

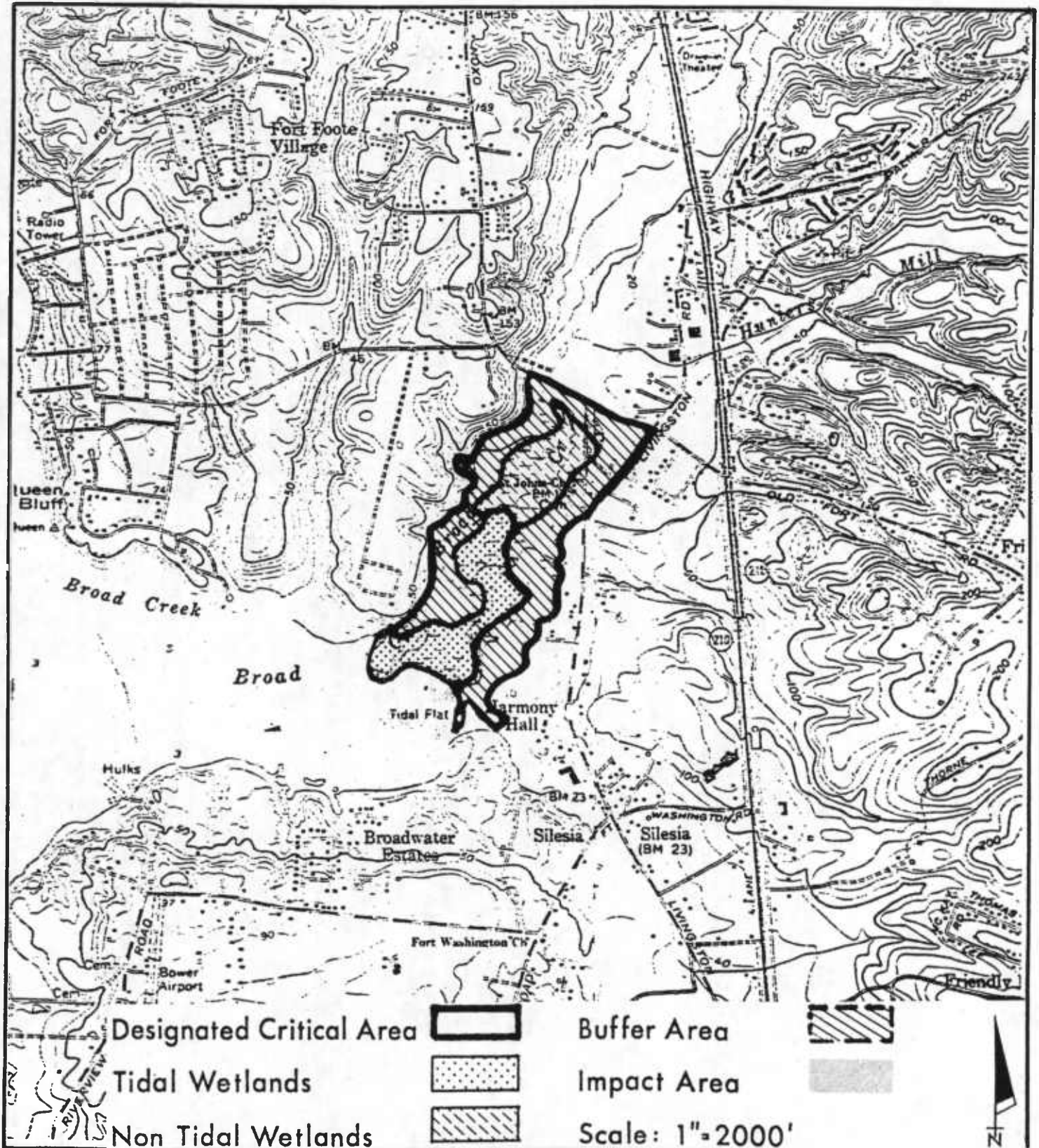
Development within the overall impact area should be carefully monitored to insure that sediment control and storm water management policies are being followed in order to prevent further sedimentation of environmentally fragile wetlands. This becomes ever more imperative as development in the northern part of the watershed continues.

Current local plans for sewer and water facilities need to be revised to ensure preservation of Broad-Henson Creek Marsh.

AREAS OF CRITICAL STATE CONCERN

Site Name BROAD / HENSON CREEK MARSH - TN10

County PRINCE GEORGE'S Acreage 200 Date Designated JAN.1981



PISCATAWAY CREEK

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 11

LOCATION:

Piscataway Creek is located in lower Prince George's County. The Creek itself empties into the Potomac River at Fort Washington National Park. The watershed is bounded on the east by Md. Rts. 301 and 373, on the north by the Andrews Air Force Base and Rosaryville Road, on the west by Old Fort and Allentown Roads, and on the south by Accokeek Road (Md. Rt. 373).

AREA DESCRIPTION:

The designated area consists of 100-year floodplains and associated tidal and non-tidal wetlands of Piscataway Creek and its major tributaries. The tidal wetlands are centered for the most part along the Creek south of Rt. 210 leading toward Piscataway Bay.

Piscataway Creek and its adjacent floodplain and wetland areas constitute a valuable aquatic and semiaquatic ecosystem. The stream itself is noted as an extremely productive herring run and is a prime spawning area for anadromous fish. In addition, the numerous freshwater marshes and wooded swamps contained within the floodplain provide a prime wildlife habitat for multifarious plant and animal species including muskrat, mink, wild turkey, otter, wood duck and osprey.

OWNERSHIP PATTERN:

The Piscataway Stream Valley contains a great number of small parcels in private ownership. There are, however, many large publicly and privately

owned parcels worth noting. Andrews Air Force Base is in the headwaters of the Creek, and the U.S. Naval Radio Receiving Station is a few miles south of Andrews. The Federal Government's Fort Washington National Park is on the north shore of the mouth of the estuary, and large parcels of land are on the south shore of the estuary. The State owns significant areas bordering the stream around the middle of the watershed: Boys Village and a Maryland Environmental Services Sludge Entrenchment Area. There are numerous large and small parcels in local ownership including Cosca Regional Park and several other sections of park and open land along the stream owned by the Maryland-National Capital Park and Planning Commission. The Washington Suburban Sanitary Commission owns the sewage treatment plant site on the south side of the River just upstream of the estuary. Washington Gas Light also owns large areas in the middle and upper stream valley. There are numerous other large private parcels along the entire valley.

CURRENT PLANS AND ZONING:

Land bordering Andrews Air Force Base and astride Md. Rt. 5 is zoned for medium to high density residential and commercial development. Most of the rest of the watershed, including the floodplain and wetland areas themselves, are zoned in low-density classifications such as R-E (residential estate -- 1 acre lots), R-A (residential agricultural -- 2 acre lots), and O-S (open space -- 5 acre lots).

Significant down-zoning has occurred in this watershed area in recent years in recognition of the environmental importance of the area.

The 1978 Water and Sewerage Plan for Prince George's County shows service patterns in the watershed similar to the land use patterns. Areas lying immediately south/southwest of Andrews Air Force Base are programmed for development in the near future. A wedge of parcels scheduled for water/sewerage service within 3 to 10 years extends in a southerly direction along Branch Avenue running through the center of the watershed. The eastern and southern sections, which include most of the designated area, are not scheduled for water/sewerage service. An exception is the northern shore

of Piscataway Creek near Fort Washington where most of the land has community water/sewerage facilities or is scheduled for service within 3 to 5 years.

The Piscataway Sewerage Treatment Plant, which currently discharges into Piscataway Bay, will ultimately discharge directly into the Potomac River.

CONTINUING PLANNING AND STUDIES:

The County is currently conducting a study to identify those areas of Piscataway Watershed susceptible to flooding, erosion, and general environmental degradation. The study will also recommend alternatives to correct existing problems and prevent future ones. A Sewerage Facilities Planning effort for the basin is currently being considered.

THREATS AND PROBLEMS:

Existing and proposed development centered in the impact area at the head of the Piscataway Watershed will result in erosion and increased runoff and flooding along Piscataway Creek and its main tributaries unless management tools are implemented. This erosion/sedimentation would also result in decreases in water quality which would adversely affect the fish and wildlife population in the watershed system.

MANAGEMENT:

Current management techniques within the wetland areas attack the twin problems of sedimentation and flooding by precluding construction in wetlands and floodplains and also by regulating runoff from adjacent areas. Construction within floodplains is severely limited by the County zoning ordinance. In addition, public purchase of conservation easements and the outright purchase of sensitive land for stream valley parks also effectively precludes development in many environmentally sensitive parts of the watershed.

County stormwater and sedimentation ordinances are utilized in the areas immediately surrounding these stream valleys. In addition, development on

steep slopes is limited to protect streambeds from siltation and runoff. In the rest of the watershed system, sedimentation controls are also utilized to control excess runoff.

A long-range strategy for protecting the entire Piscataway Creek Watershed system is to encourage rezoning of large developable parcels to "comprehensive design zone" categories which allow development of cluster housing on smaller than normal lots with the provision that those portions of the parcel which are environmentally sensitive will be left undeveloped.

AREAS OF CRITICAL STATE CONCERN

Site Name PISCATAWAY CREEK - TN11

County PRINCE GEORGE'S

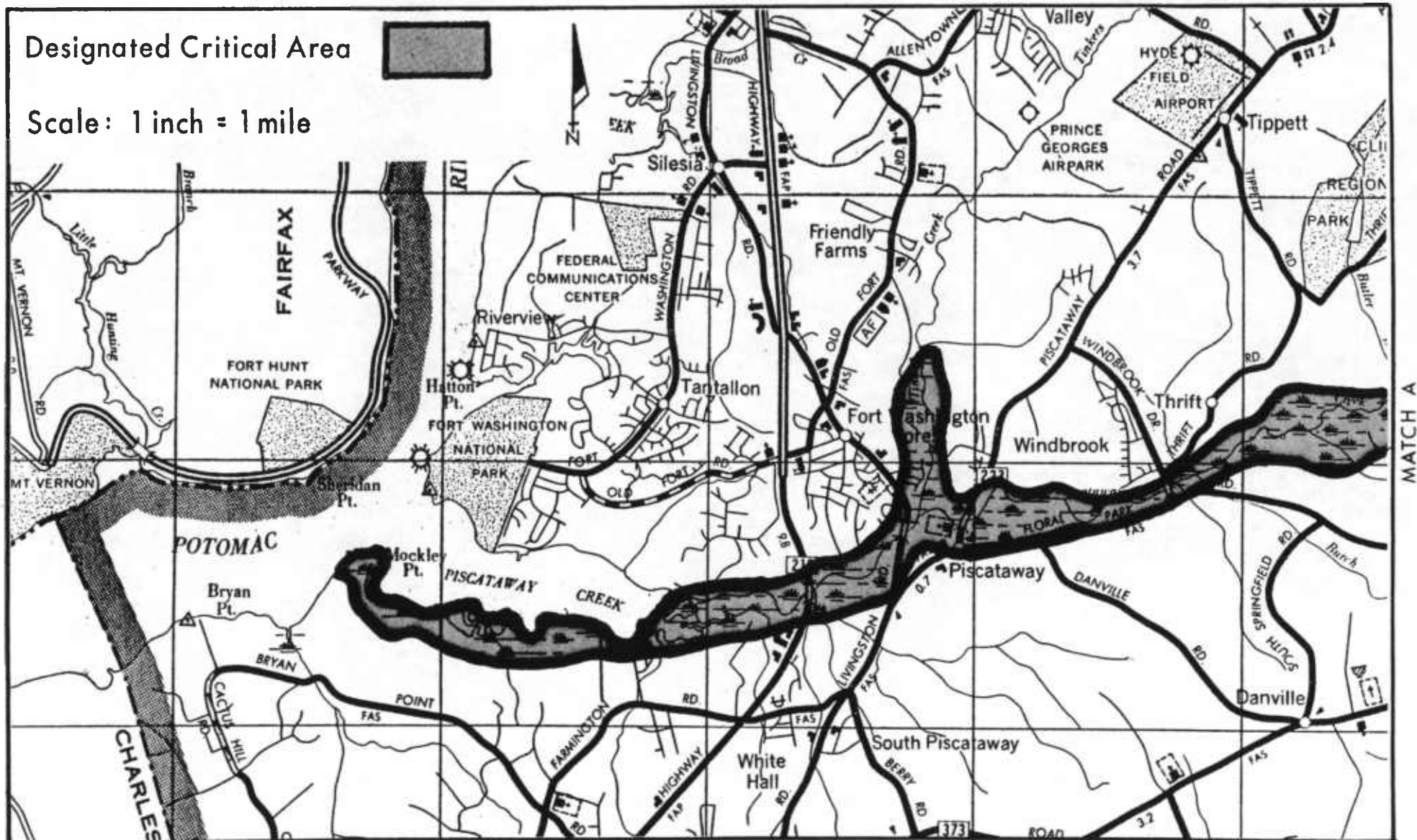
Acreage 2,450

Date Designated JAN.1981

Designated Critical Area



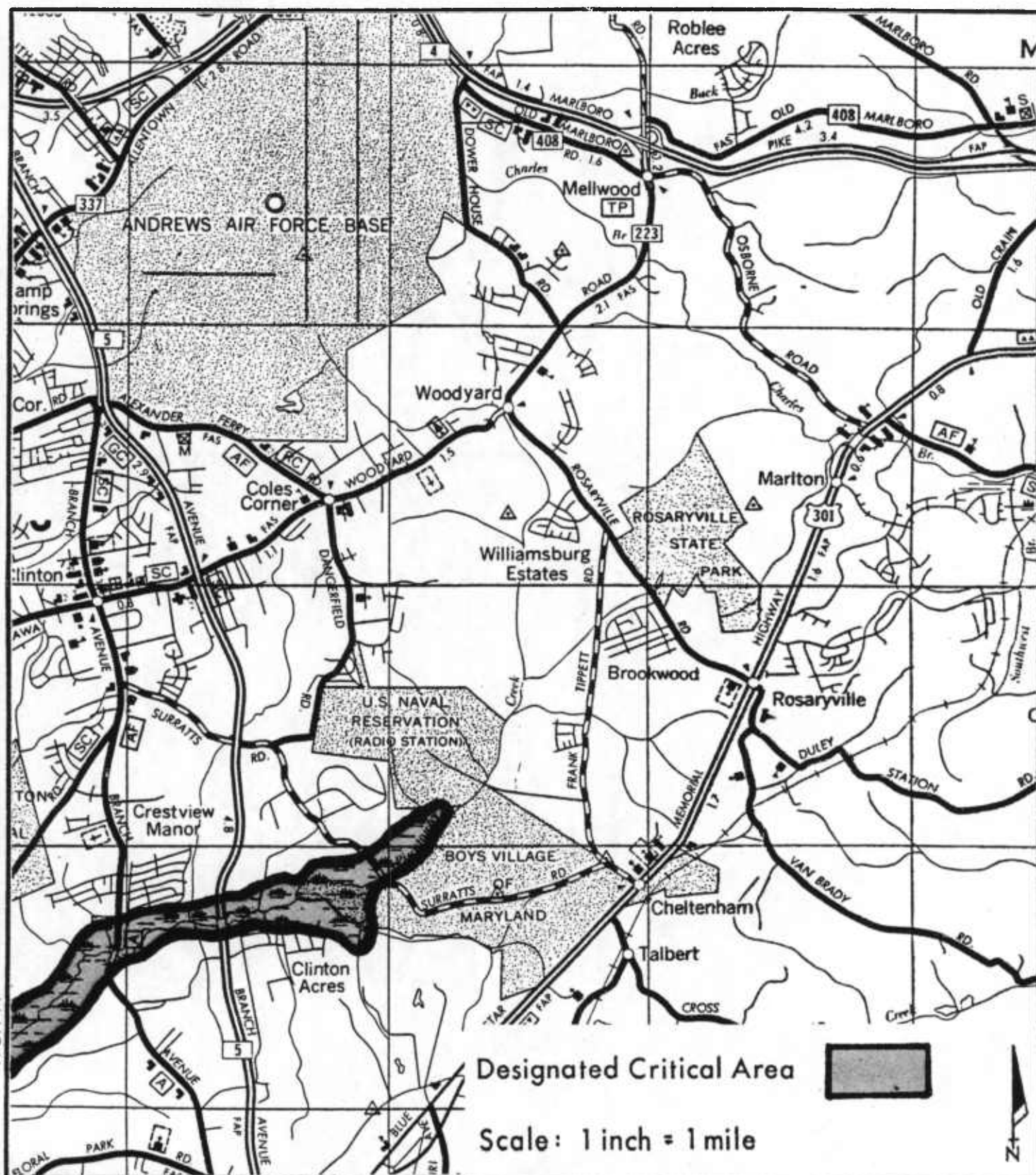
Scale: 1 inch = 1 mile



AREAS OF CRITICAL STATE CONCERN

Site Name PISCATAWAY CREEK - TN11

County PRINCE GEORGE'S Acreage 2,450 Date Designated JAN.1981



CHAPTICO RUN

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 12

LOCATION:

Chaptico Run is located in the northwestern portion of St. Mary's County south of Route 5. It originates at the ridge line between the Potomac and Patuxent drainage basins and empties into Chaptico Bay, a subestuary of the Wicomico River which flows into the Potomac River Estuary.

AREA DESCRIPTION:

Chaptico Run is a fresh water to high tidal marsh area that provides an excellent habitat for many species of plants and wildlife. Wildlife species include osprey, beaver, white tail deer, otter, mink, terrapin, wood duck, and other migratory waterfowl, crabs, anadromous fish, shad, and herring. Plant species include Giant Cordgrass (*Spartina cynosuroides*) and Cattail (*Typha*) and form a dominant base for the food chain in the ecosystem. Mature hardwoods largely compose the buffer area. The wetland provides a feeding and nesting area and contributes nutrient value to the Wicomico and Potomac Rivers.

OWNERSHIP PATTERNS:

The area is comprised of multiple private owners.

CURRENT PLANS AND ZONING:

The designated area and the drainage area are zoned R-1, allowing one dwelling per acre.

Water and sewer facilities in the Chaptico Run area are in the W-6 and S-6 categories. These categories mean that service is not planned within ten years and any development must be supported with on-site systems.

CONTINUING PLANNING AND STUDIES:

None.

THREATS AND PROBLEMS:

The only known threat at this time to the area is that of sedimentation and siltation from nearby low density development.

MANAGEMENT:

Within the drainage area, sedimentation regulations should be strictly applied. Additionally, conservation management plans should be required for all farming and timber operations. The State's Water Resources Administration's permit system, specifically those permits needed for alterations in tidal wetlands and the 100-year floodplain, should be strictly applied.

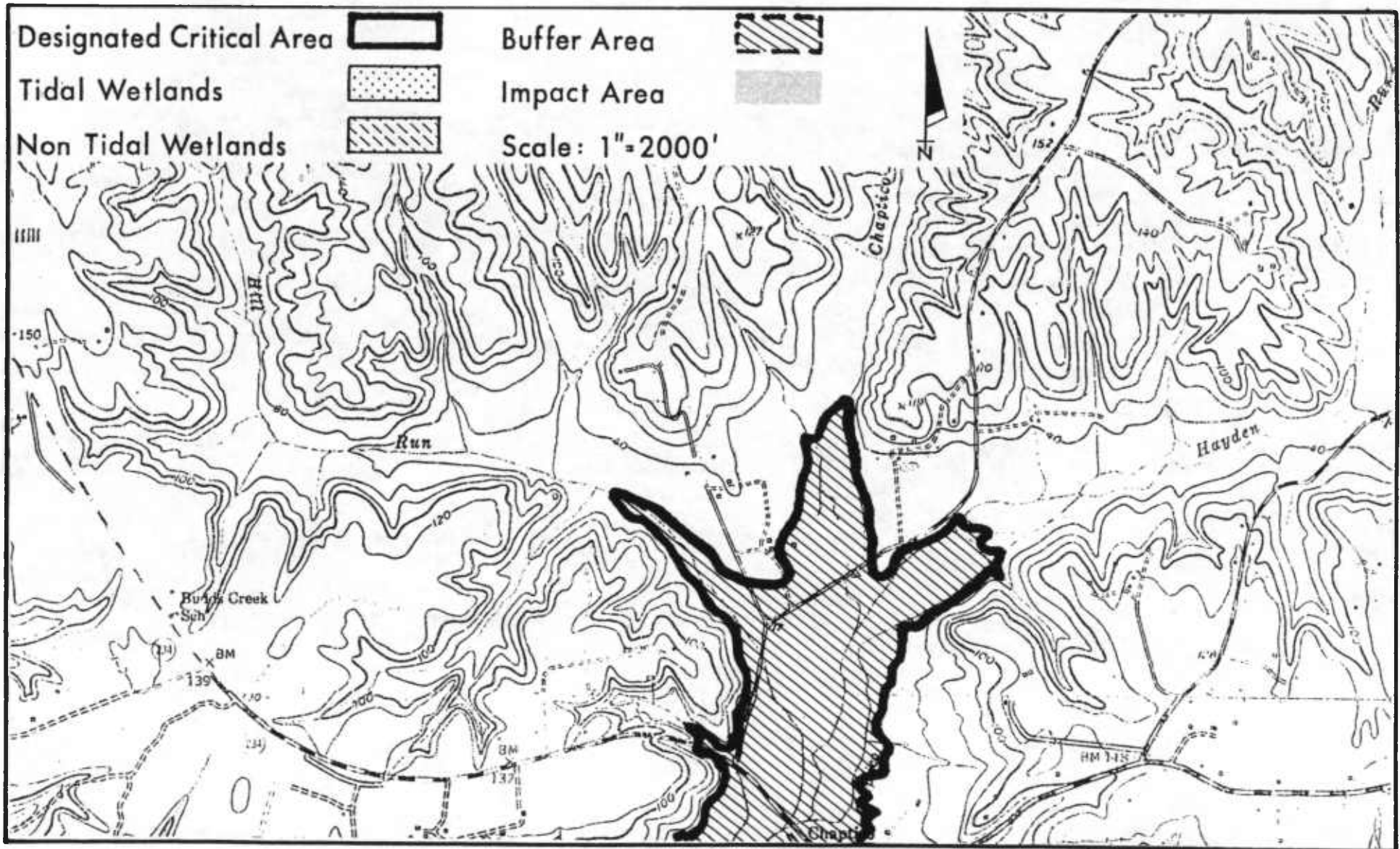
AREAS OF CRITICAL STATE CONCERN

Site Name CHAPTICO RUN - TN12

County ST. MARY'S

Acreage 1,050

Date Designated JAN.1981



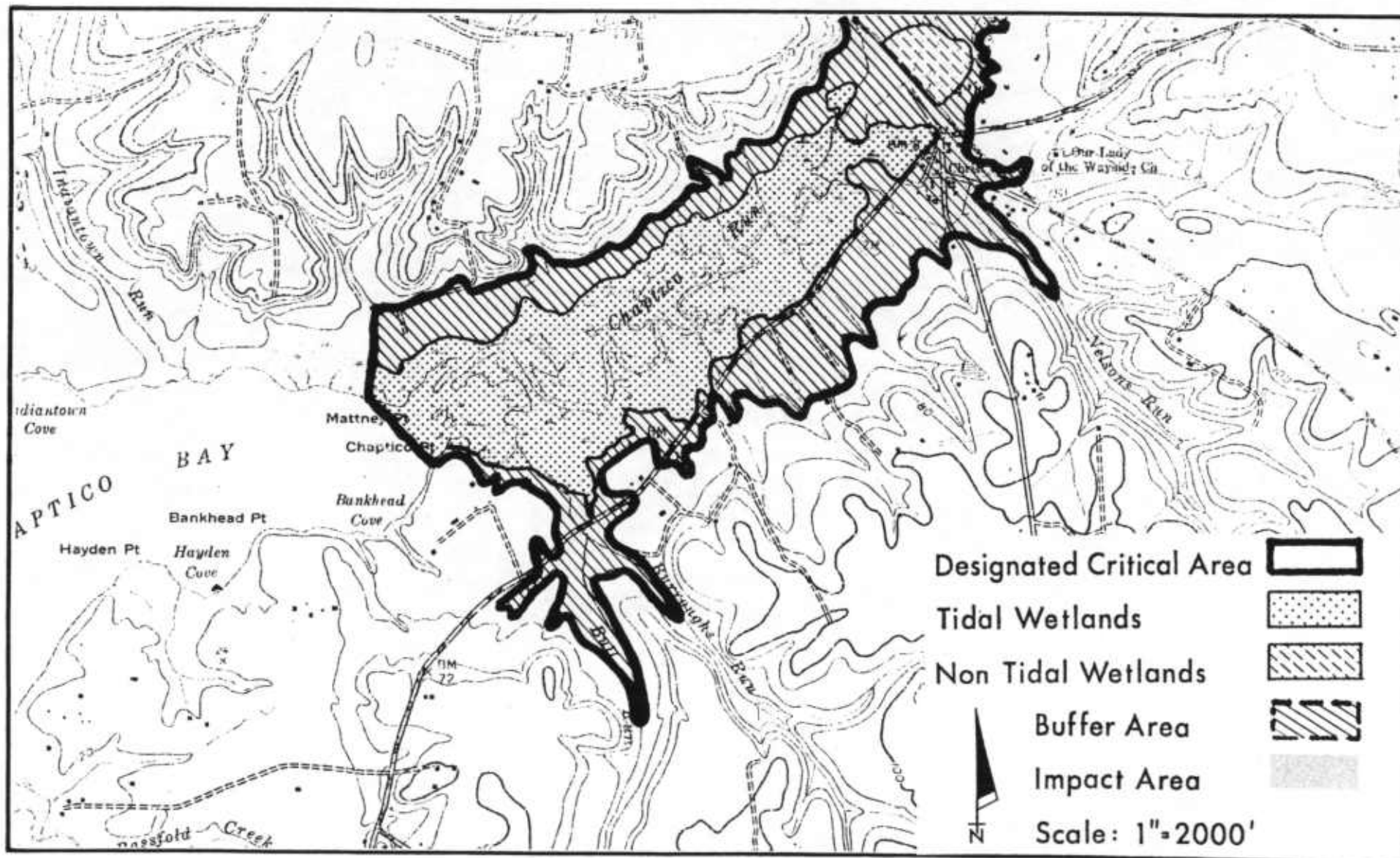
AREAS OF CRITICAL STATE CONCERN

Site Name CHAPTICO RUN - TN12

County ST. MARY'S

Acreage 1,050

Date Designated JAN.1981



KILLPECK/TRENT HALL CREEKS

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 13

LOCATION:

Killpeck/Trent Hall Creeks is located in the northwestern portion of St. Mary's County north of Route 5. It originates at the ridge line between the Potomac and Patuxent River drainage basins and empties into the Patuxent River.

AREA DESCRIPTION:

Killpeck/Trent Hall Creeks and wetlands encompass approximately 450 acres. It is a fresh water to tidal marsh area and provides a habitat for significant plant and wildlife species. Wildlife species include: mink, otter, beaver, Canada geese, wood ducks, and large concentrations of over-wintering swan. It is also a resting and feeding area for other migratory waterfowl, an oyster and clam nursery and feeding area, and a spawning area. An eagle nest is also in the area. The plant life constitutes the nutrient base of the food chain to support this ecosystem.

The buffer area is within the 50-foot contour line and is composed of mature hardwoods.

OWNERSHIP PATTERNS:

The area is comprised of multiple private owners

CURRENT PLANS AND ZONING:

The designated area and most of the drainage area is zoned R-1, allowing one dwelling unit per acre.

Water and sewer facilities are not planned for the area.

CONTINUING PLANNING AND STUDIES:

None.

THREATS AND PROBLEMS:

The only known threat at this time is sedimentation and siltation that may occur from nearby low density development.

MANAGEMENT:

Within the drainage area of Killpeck/Trent Hall Creeks, sedimentation regulations should be applied. Additionally, conservation management plans should be required for all farming and timber operations; and the State permit system, specifically those permits needed for alterations in tidal wetlands and the 100-year floodplain, should be strictly applied.

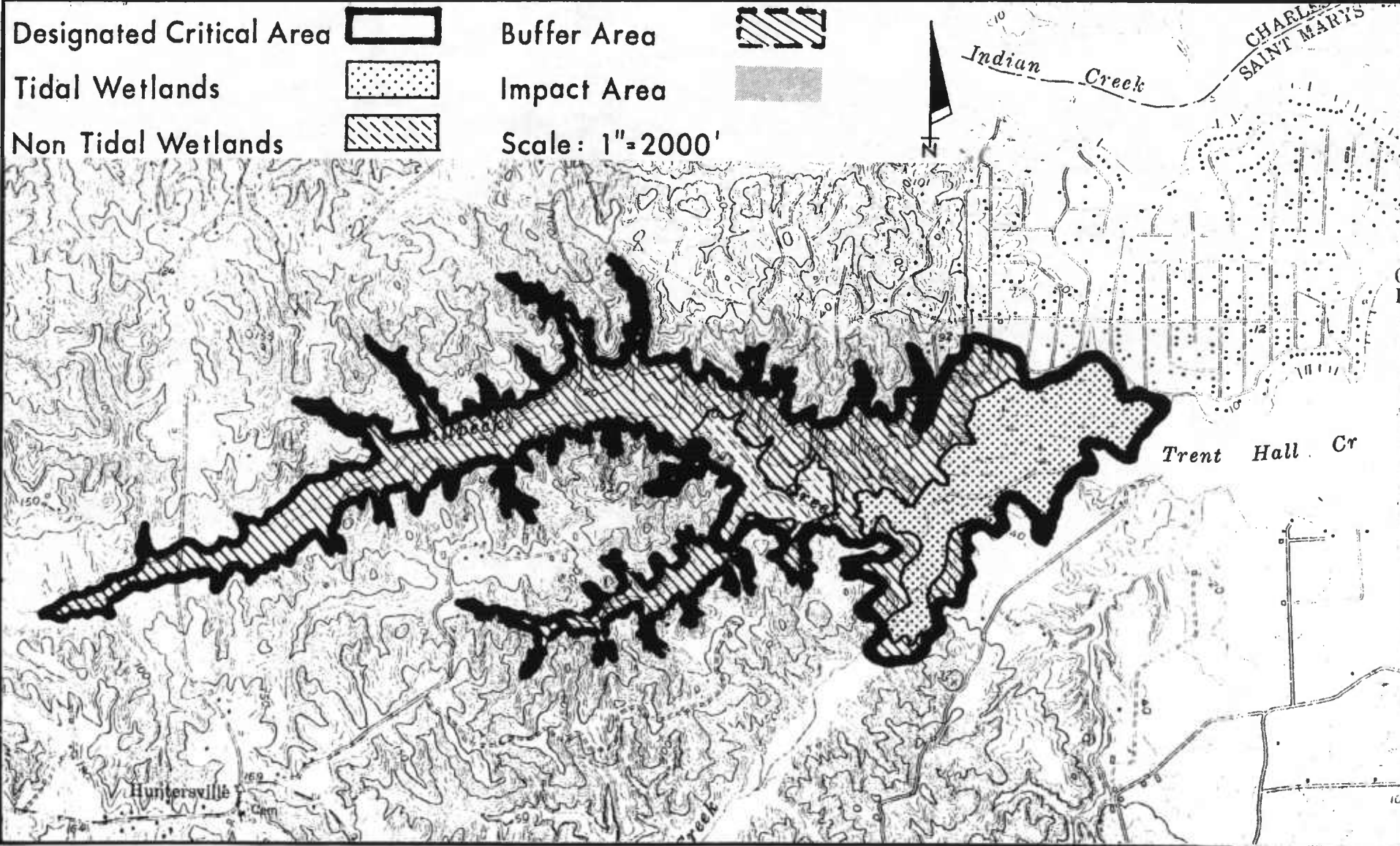
AREAS OF CRITICAL STATE CONCERN

Site Name KILLPECK/TRENT HALL CREEKS - TN13

County ST MARY'S

Acreage 450

Date Designated JAN. 1981



POCOMOKE RIVER

CLASS: Tidal and Non-Tidal Wetlands

SITE NUMBER: TN 14 (SA 1)

The Pocomoke River designation discussion and map are contained under the Special Area class since there are many important purposes for its designation in addition to protection of its wetlands. However, the Pocomoke River designated area contains large areas of significant and unique wetlands that are an important part of the designated region's ecosystem. For this reason, the Pocomoke River is also being designated under the Tidal and Non-Tidal Wetlands classes and its wetlands should be managed in accord with the management policies and programs for these classes. The area description and map for the Pocomoke River Designated Area is on Page 4-4.

SULLIVAN'S COVE MARSH

CLASS: Tidal Wetlands

SITE NUMBER: T 15

LOCATION:

Sullivan's Cove Marsh is located in central Anne Arundel County on the north shore of the Severn River. It is situated between the communities of Linstead on the Severn on the west, Severna Park to the north, and Round Bay on the east.

AREA DESCRIPTION:

The Sullivan's Cove Marsh constitutes the only significant tidal brackish water marsh on the Severn River. This site, which covers approximately 30 acres, is surrounded by steep forest covered hills which isolate the area from the surrounding highly developed Severna Park communities.

Sullivan's Cove Marsh contains four separate marshes. Three of the tidal marshes are typical salt marshes with characteristic *Spartina alterniflora* predominating. In contrast, the fourth marsh is of such low salinity that freshwater plants such as the tuberous water-lily, (*Nymphaea tuberosa*), sphagnum mosses, and Atlantic White Cedar grow there. The presence of two healthy stands of Atlantic White Cedar, a tree rarely found in natural stands on the Chesapeake Bay's Western Shore, makes this site botanically noteworthy.

The area is used heavily by wildlife and has a great variety of species of plants. On the steep slopes one may observe the chestnut oak, black oak, white oak, mountain laurel, pink azalea, trailing arbutus, American chestnut, southern red oak, and flowering dogwood. Plants found in the wooded swamp include black willow, poison sumac, arrowwood, alder, winterberry, alder, sensitive fern, nettel chain fern, and common greenbrier. Within the white cedar stand are found Atlantic white cedar, black gum, sweetbay magnolia, pitch pine, red maple, red chokeberry, possumhaw viburnum, highbush, blueberry,

cinnamon fern, royal fern, and sphagnum moss. Vegetation identified in the sandy lowlands include the blackjack oak, scarlet oak, chinquapin, sand hickory, Virginia pine, persimmon, Eastern red cedar, American holly, inkberry, bayberry, wax-myrtle persimmon, swamp leucothoe, groundsel tree, sheep laurel, dangleberry, black huckleberry, low blueberry, partridge berry, shadbush, and bracken fern.

The marsh provides a resting place for migrant waterfowl. Some 300-400 waterfowl may be sighted at one time. These represent a variety of species including the white and glossy ibis, American bittern, little blue heron, great blue heron, green heron, as well as the black-crowned and yellow-crowned night herons. Large numbers of vireos, tanagers, catbirds, warblers, and thrushes feed here during migration. The Southern bald eagle, a bird spotted rarely in the central portion of the county, has been seen at Sullivan's Cove Marsh.

The marshes are abundant with small fish and provide the chief wintering area for fundulus (a small carnivorous minnow). It is also a prime fish spawning ground.

OWNERSHIP PATTERNS:

Anne Arundel County owns thirteen acres of this site, including part of the marsh and surrounding area. The remaining portion of this site is under private ownership.

CURRENT PLANS AND ZONING:

Currently, this area is zoned R5 (five residences to an acre). This residential district requires a minimum lot size of 7,000 square feet, and allows cluster development in accordance with the Anne Arundel County zoning ordinance. Water service exists at the site property line. Sewer service facilities are in the six to ten year service category.

CONTINUING PLANNING AND STUDIES:

County Council Resolution #28-79 identifies the importance of immediate acquisition of this site. The Anne Arundel County Department of Parks and Recreation has completed acquisition on thirteen acres of the southern portion of this site which will be set aside as a natural preserve. No plans have been indicated for the remaining portion of this site.

Sullivan's Cove Marsh abuts the Severn River, a designated scenic river under provisions of the Maryland Scenic Rivers Act of 1968. The Scenic Rivers Program is charged with protecting the scenic, fish, wildlife, and other values of all designated scenic rivers. A Scenic River Plan is currently being prepared by the Department of Natural Resources.

THREATS AND PROBLEMS:

Sullivan's Cove Marsh is the last natural area on the north shore of the Severn River. Although a significant portion of the marsh has been acquired and preserved by the County, development activity in the impact area remains a possibility. The area contains highly erodible soils in the adjacent uplands. Runoff and sedimentation from construction could impinge upon the marshlands quality and jeopardize the scenic and wildlife values of the area.

MANAGEMENT:

Management plans are needed for the area not acquired by the County which will serve to protect the marsh. Additional management techniques to be considered include the examination of the feasibility of rezoning the surrounding buffer and impact area from R5 to OS (open space). Public purchase of remaining land and obtaining protective easements would contribute to a workable management plan.

AREAS OF CRITICAL STATE CONCERN

Site Name SULLIVAN'S COVE MARSH - T15

County ANNE ARUNDEL Acreage 20 Date Designated JAN. 1981



DEEP POND/BEVERLY BEACH

CLASS: Tidal Wetlands

SITE NUMBER: T 16

LOCATION:

The pond and beach are located in Southern Anne Arundel County at the end of the Mayo Peninsula.

AREA DESCRIPTION:

Deep Pond/Beverly Beach, a site of approximately 350 acres, features a large beach area along with inland ponds and forests. Most of the site was, at one time, part of a privately owned and operated recreation area - the Beverly Beach and Triton Beach Clubs.

The beach itself is a wide sandy stretch which extends roughly one mile along the Chesapeake Bay shoreline. Jetties extend from the beach which provide the opportunity for fishing. In addition, the area near the beach could be used for recreational boating; however, dredging would be necessary. These attributes, plus the fact that wide beaches of this type are rare along the Bay, make Beverly Beach a valuable recreation resource.

Inland from the beach are a large brackish water tidal pond known as Deep Pond and several other ponds of smaller size. The inland wooded area features a stand of willow oaks and scattered evergreens. The beach, forest and ponds form an extremely diverse wildlife habitat. Some 83 species of birdlife utilize this area.

The open fields to the interior are overgrown and reclaimed by shrubs. Maryland Route 214 (Central Avenue) and several local roads make the site easily accessible. Considering its former use and the current need for more public access to Chesapeake Bay shoreline, the site offers an outstanding opportunity for a public recreational facility and natural area.

OWNERSHIP PATTERNS:

The land is currently owned by a private development corporation although the County is considering the purchase of this site for public recreational use.

CURRENT PLANS AND ZONING:

The area is zoned Deferred Development (DD) and Maritime Group District (MB). Retail stores and restaurants are permitted in the DD district by special exception. A restaurant is permitted in the MB district by right. These zones permit low density residential development and maritime uses such as piers, wharfs, and repair facilities. Some adjoining land is zoned for commercial use but most of the land adjoining the critical area is residential allowing for 2-5 units per acre. This land is primarily developed with houses.

The Sewerage Plan designates the site for sewerage service in the immediate future. Service would be provided when current questions concerning the nature of sewer service for the Mayo Peninsula are resolved. Community water services are not scheduled for at least 11-20 years. The northwest portion of the site, above Deep Pond, is in the 6-10 year sewer service area.

CONTINUING PLANNING AND STUDIES:

Continuing studies concerning the proposed capacity and nature of the Mayo Peninsula Sewerage System will have a great impact on the ultimate development of the tract and its surroundings. A sewerage facilities plan is currently under preparation for the Broadwater service area which includes the Mayo Peninsula.

THREATS AND PROBLEMS:

Development of the tract for marina and residential use could result in destruction of ponds and forests and associated natural habitats. Private development would result in loss of public access to the Beach itself, unless public easements were granted.

MANAGEMENT:

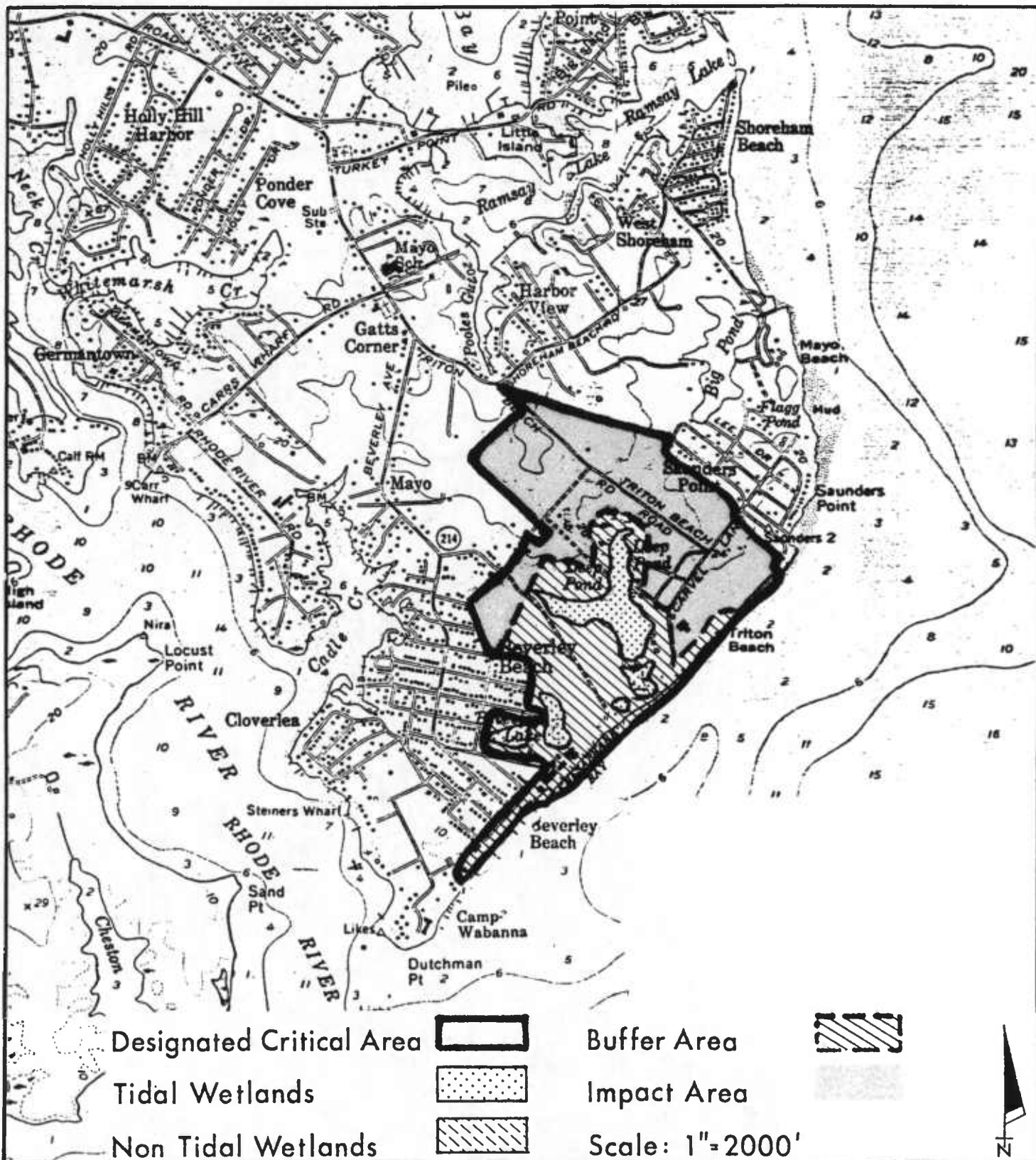
The long-term techniques which are most desirable to the County are purchase and development of the site for public recreation. Anne Arundel County has requested assistance from the Heritage Conservation and Recreation Service, U. S. Department of the Interior, as well as State Program Open Space to purchase the property for recreational use. This property, if purchased, should be considered for rezoning as OS (Open Space), a category allowing recreational development.

The development of adjacent areas, i.e., that portion of the Mayo Peninsula surrounding the site could affect the ponds and beach by virtue of sedimentation and pollution. If development should occur proximate to the site, care should be taken to strictly enforce all sedimentation and stormwater runoff ordinances.

AREAS OF CRITICAL STATE CONCERN

Site Name DEEP POND / BEVERLY BEACH - T16

County ANNE ARUNDEL Acreage 350 Date Designated JAN.1981



BLACK MARSH

CLASS: Tidal Wetlands

SITE NUMBER: T 17

LOCATION:

Black Marsh is located adjacent to the Chesapeake Bay on the Patapsco Peninsula in eastern Baltimore County. The area lies east of North Point Road and south of Millers Island Road, and includes approximately 150 acres of tidal wetlands.

AREA DESCRIPTION:

The Black Marsh Critical Area consists of a large tidal marsh bordered by an upland forest. The marsh contains grasses, phragmites, juncus, and cattails.

The upland forest area contains a moderately dense vegetative canopy which supports sweet gum, tulip poplar, and southern red oak as the dominant species. Associated tree species include black gum, white oak, chestnut oak, pitch pine, virginia pine, willow oak, and red maple.

Animal life in the area includes many bird species, including red shouldered hawk.

OWNERSHIP PATTERNS:

The entire area surrounding and including the Black Marsh tidal wetland is under one ownership - the Bethlehem Steel Corporation.

CURRENT PLANS AND ZONING:

Zoning on this site, adopted October 14, 1980 by the Baltimore County Council in the County's Comprehensive Cycle Rezoning Process, remains as it was previously, RC-2 and MH-IM. The RC-2 zoning, agricultural zone, is applied to nearly all of the tidal wetland. The zone is utilized in this case to

provide protection to the wetland area. The areas adjacent to the tidal wetland are zoned MH-IM, the highest level of industrial use in the County. Because this zone has been applied to small areas within the wetlands, portions of the tidal wetlands will not be afforded the same protective setback requirements available to the remaining wetlands. Uses within this zone must be at least 150 feet from the adjacent RC-2 zone.

Water service facilities to serve the general area are presently adjacent to the site. Sewer service facilities are located along Millers Island Road, which is on the northern edge of the critical area.

CONTINUING PLANNING AND STUDIES:

The Bethlehem Steel Corporation plans to utilize the land area zoned for industry as a storage area for raw materials utilized in the steel making process. Studies have not been conducted to determine the long-range impact of this proposal.

THREATS AND PROBLEMS:

The Bethlehem Steel Company's program to utilize the area around the Black Marsh tidal wetland for material storage poses the most significant immediate problem to the protection of the wetland. The impact of stormwater runoff from a quantity and quality standpoint and the removal of portions of the upland forest have not been studied and may prove to be detrimental to the vegetation and wildlife in and around the wetland. Utilization of areas adjacent to the wetland will reduce, if not remove, opportunities to create a protective buffer around the wetland.

MANAGEMENT:

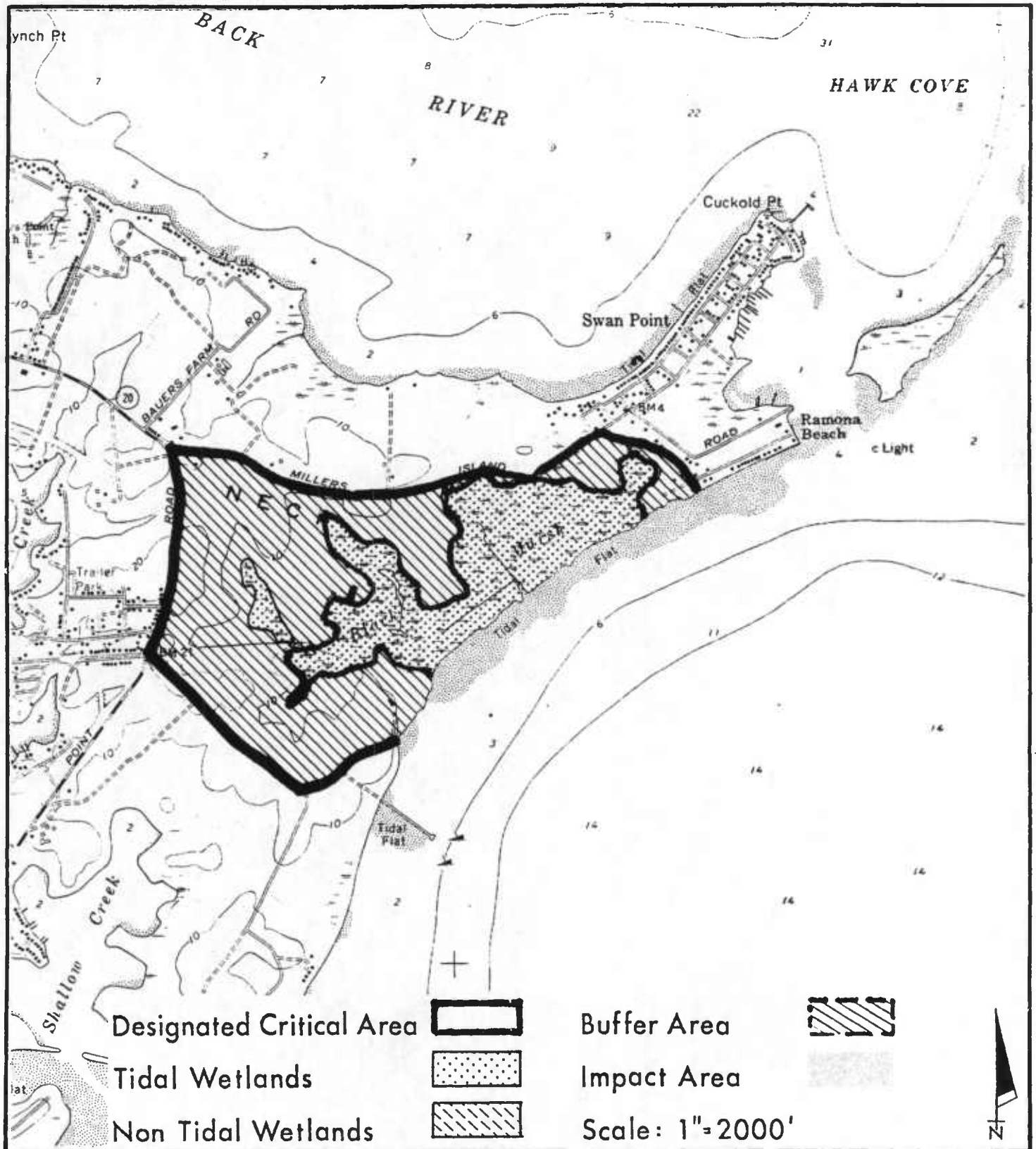
Effective protection of the Black Marsh tidal wetland and the provision of a buffer area rests principally with the Maryland's wetland laws and the measures that the property owner is willing to provide in his development plans. The degree to which the property owner is allowed to utilize portions of the tidal wetlands will rest with execution of the tidal wetland permit process. Flexibility in the development plans for the buffer area and within the impact

area is necessary if protective mechanisms are to be developed. Basic responsibility for plan review, in this instance, rests with Baltimore County. These mechanisms include, but are not limited to, improved sediment and stormwater management controls, and regulating and monitoring of stormwater quality. In the next countywide rezoning process, expansion of the RC-2 (Agricultural Zone) zone should be considered again as a means of providing a secure buffer area around the tidal wetland.

AREAS OF CRITICAL STATE CONCERN

Site Name BLACK MARSH - T17

County BALTIMORE Acreage 500 Date Designated JAN. 1981



BUSH CREEK MARSH

CLASS: Tidal Wetland

SITE NUMBER: T 18

LOCATION:

The Bush Creek Marsh lies at the headwaters of the Bush River at the mouth of Bynum Run north and south of U.S. Route 40 in south central Harford County. Included in the Bush Creek Marsh is the State designated Bush Declaration Natural Resources Management Area north of U.S. Route 40.

AREA DESCRIPTION:

The Bush Creek Marsh is a significant fish and wildlife habitat. The wetland encompasses approximately 45 acres to the south of Route 40 and another 30 acres to the north of the highway. Vegetation in the marsh grades into the typical pickerelweed and arrow-arum. These species also border the marsh along its northern edge and grade into cattails with increasing elevation. The southwestern reaches of the lower marsh contain a number of marsh mallow mixed with cattails. A central strip of the marsh is dominated by smartweed and rice-cutgrass.

The inland marsh, which is located to the north of Route 40, is composed primarily of cattails with a mixture of smartweed and arrow-arum in the center. Red-winged blackbirds are common in the area. Overall, the Bush Creek Marsh appears to have a relatively low vegetational diversity, possibly due to increased sedimentation rates in the area which keep the marsh in a constant state of change, and prevent species which require greater stability from getting established.

OWNERSHIP PATTERNS:

The predominant land owner north of U.S. Route 40 is the Bata Land Company. However, portions of the Bush Declaration Natural Resources Management Area have been acquired by the State. To date, 96.7 acres are under the control of the State in and around this critical area.

South of U.S. Route 40, several private ownerships exist including portions owned by the Bata Land Company.

CURRENT PLANS AND ZONING:

The primary zoning classification around the Bush Creek Marsh is R-3. This residential zone permits single family, two family and multi-family residential units. Also allowed by conditional use within the R-3 zone is the Community Development Project (CDP). This conditional use allows exceptions to lot areas, setback requirements and variation in building arrangement. The Bata Riverside development just east of the site has obtained the CDP classification and currently is under development.

The marsh and surroundings are placed in the same classification and staging pattern for both water and sewerage service. The marshland itself lies in the 6-10 year service categories. Land to the southwest lies in the 1-2 and 3-5 year service categories. To the east, on the other side of Bush Run, lies a large parcel of land owned by the Bata Land Company, which will receive water/sewerage service within 1-2 years. To the north and west, the abutting land lies in the 6-10 year service category.

CONTINUING PLANNING AND STUDIES:

The Department of Natural Resources has developed an acquisition plan for the Bush Declaration Natural Resources Management Area. This plan calls for the acquisition of land east and west of James Run, north of U.S. Route 40 and generally south of Interstate 95. At present, the State has acquired 96.7 acres of land consisting of four individual parcels. Acquisition opportunities on the east side of James Run present a problem in that the Bata Company has begun development of its town, Riverside, in this area. The Department of Natural Resources is attempting to negotiate an easement on portions of Bata's property.

Development proposed in the Bush Creek Marsh area consists of single family detached residential. The appropriate stormwater management and sediment control facilities have been required as part of this development.

THREATS AND PROBLEMS:

The immediate threat to the Bush Creek Marsh north of U.S. Route 40 is the Bata Riverside development. Enforcement and maintenance of stormwater and sediment control facilities is critical to the protection of the marsh. Even with the proper execution of these development requirements, the quality of the water runoff may prove detrimental to the life of the marsh. The provision of buffer areas around the marsh will assist in providing minimal protection.

A secondary impact to the marsh exists from upstream development in the broader impact area. The main stream feeding into the marsh, Bynum Run, is on the edge of the County Master Plan Development Envelope. The major portion of County residential growth is programmed to occur in the corridor, running west of Bynum Run. Stringent enforcement of stormwater and sediment controls will be necessary if the viability of the marsh is to be maintained.

MANAGEMENT:

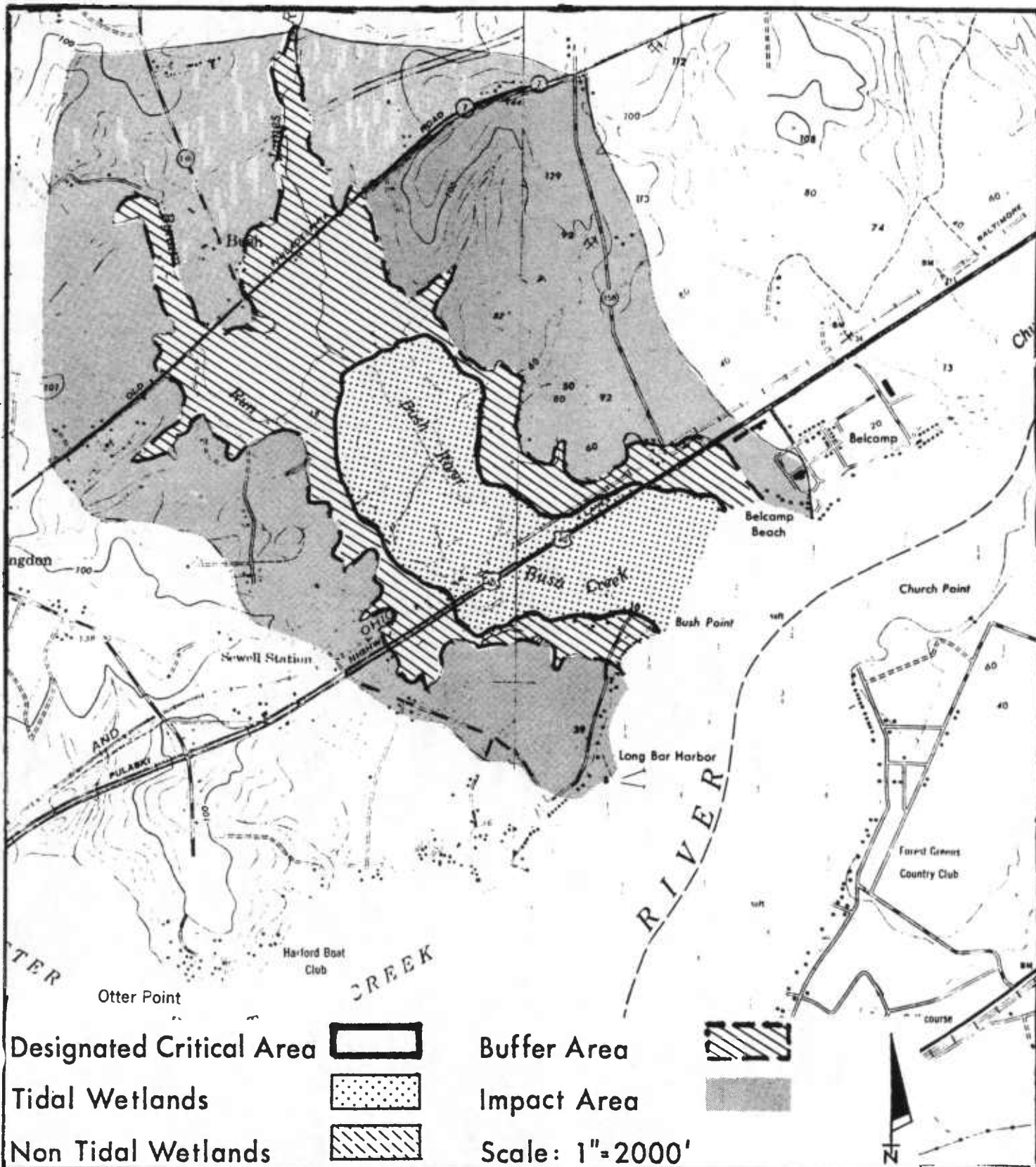
Short-term management strategies are necessary in the immediate area of the Bush Creek Marsh. The Department of Natural Resources program of negotiating easements with the Bata Land Company on the east side of the marsh should be continued. Stringent enforcement of stormwater and sediment controls in this area should be an immediate priority of Harford County.

Long-term management involves a careful review of programmed development in the Bynum Run Watershed. The level of development intensity should be responsive to the ability of the environment to accommodate the impact. A comprehensive stormwater management plan should be developed for the watershed in addition to individual site controls. The sewer and water service area categories for the marsh proper should be reevaluated by the County.

AREAS OF CRITICAL STATE CONCERN

Site Name BUSH CREEK MARSH - T18

County HARFORD Acreage 300 Date Designated JAN.1981



CHURCH CREEK MARSH

CLASS: Tidal Wetlands

SITE NUMBER: T 19

LOCATION:

The Church Creek Marsh lies at the head of the Bush River near Belcamp.

AREA DESCRIPTION:

Church Creek Marsh is a long (5,000 ft.) marsh extending primarily up the western edge of Church Creek, with the wetlands area estimated at 70 acres. Although arrow-arum and pickerelweed dominate the deeper waters along the edge of the channel, cattails cover much of the area, with marsh mallow (*Hibiscus palustris*) forming fairly dense stands at some locations. Cattails are found in the higher areas of the marsh which extend in from upland sites.

Approximately 1,200 ft. upstream from the mouth of the Creek is a stand of common reed (*Phragmites communis*). Many isolated stands of pickerelweed and arrow-arum are located throughout the marsh. The uppermost reaches are again dominated by cattails with smartweed, pickerelweed and arrow-arum along the water's edge. Church Creek appeared to be the most vegetationally diverse of the three marshes in the Bush River area.

Mallard ducks, common egrets and green heron have been spotted and among the mammals, species known to make their homes in this marsh are nutria and muskrat.

OWNERSHIP PATTERNS:

The north side of Church Creek, which includes the marsh itself as well as buffer and impact areas, is owned by Bata Land Company. The south side of the Creek opposite the marsh, which also includes a part of the impact area, lies in private ownership with two major parcels accounting for most of this land area.

CURRENT PLANS AND ZONING:

The Church Creek wetland is presently zoned R-3 and M-1. The R-3 classification permits single family, two-family and multi-family residential development. Minimum lot areas for the R-3 zone are as follows: single family - 7,500 square feet, two family - 5,000 square feet, and multi-family - 4,000 square feet. Additionally, this zone permits by conditional use the Community Development Project (CDP). This conditional use option permits exceptions to lot area and setback requirements and variation in building arrangement.

A small portion of Church Creek Marsh is zoned M-1, Light Industrial District. This zone permits the normal light industrial uses found in most urban areas.

Across Church Creek, opposite from the Marsh, land is zoned A-1, Agricultural District. This zone is designed primarily for agricultural uses but does allow residential development at a very low density, one lot per 10 acres of land with a minimum lot size of two acres.

North of U.S. Route 40, within the Bata Riverside development and near the Church Creek Marsh, land is zoned M-2. This zone is the most intense industrial zone in Harford County and allows heavy manufacturing and refining operations.

The County Water and Sewerage Plan places the Marsh in the W-5 and S-5 categories which authorize water/sewerage service to be provided there within 6-10 years. The buffer area also lies in the same categories with the exception of adjacent Belcamp, which is now served by water/sewerage.

A portion of the land (owned by the Bata Land Company) lying immediately northwest of the B&O Railroad track opposite the Marsh, has been placed in the W-4/S-4 category, which allows water/sewerage service in 3-5 years. The rest of the land in the vicinity is not scheduled for service.

CONTINUING PLANNING AND STUDIES:

While no plans exist for development or other alterations of the Marsh itself, plans for adjacent private development could have significant effects there. Bata Land Company is initiating construction of a new town of Riverside with an industrial component to be developed along Route 40 adjacent to the Marsh. In addition, plans exist for multi-family residential developments south of Route 40 on the western edge of the site.

THREATS AND PROBLEMS:

These adjacent developments pose potentially serious problems by virtue of possible sedimentation and runoff, both during and after construction, and the resulting siltation of the Marsh itself. Such siltation obviously would devastate spawning grounds and other sensitive and natural features. The area lying across Church Creek opposite the site is currently in agricultural use and sedimentation and runoff are also major concerns in this sector.

MANAGEMENT:

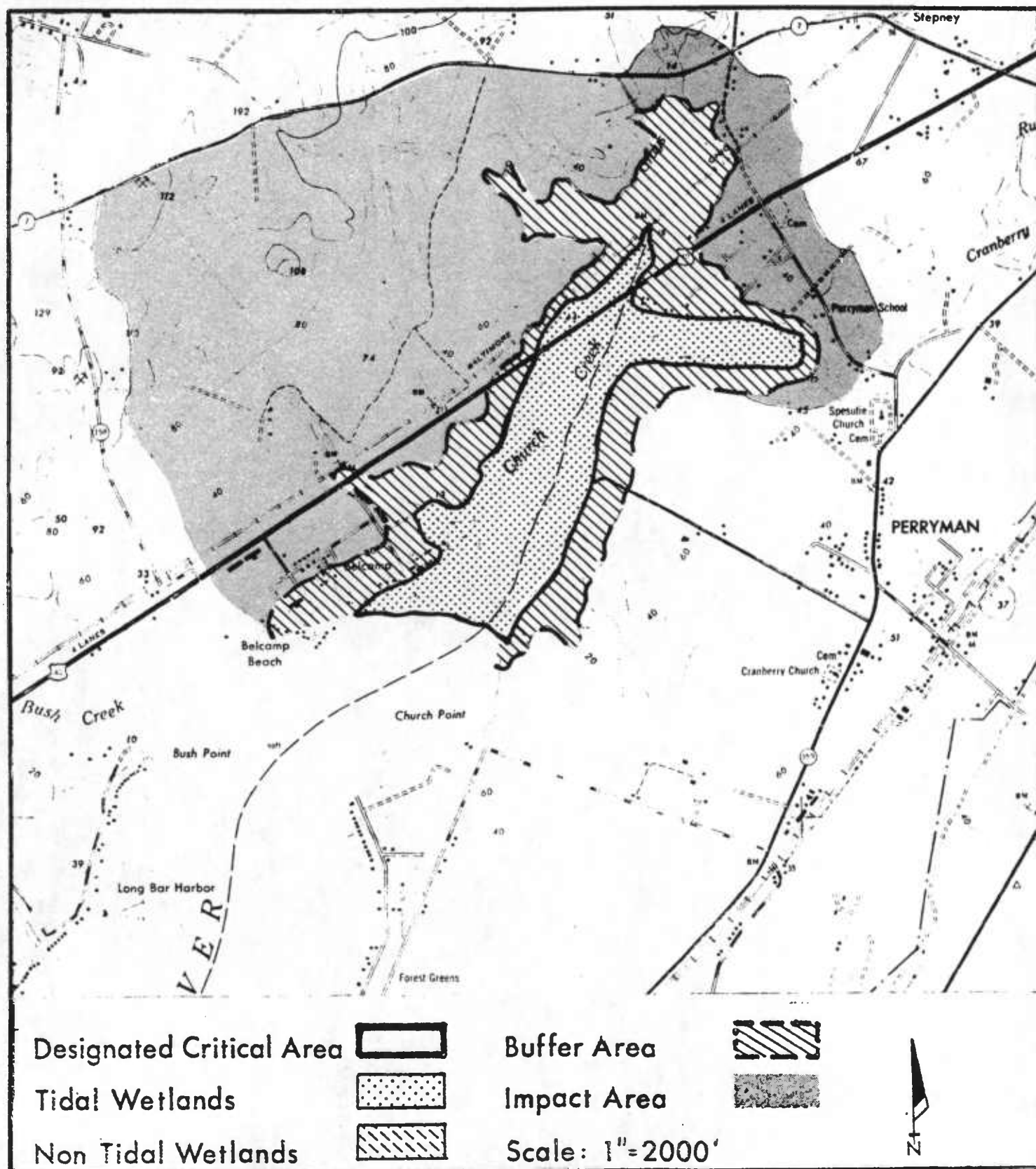
The buffer areas to the north and west/southwest must be preserved when the planned industrial and residential developments are commenced. Within the impact area to the north and west, stormwater management and sedimentation ordinances must be strictly enforced to prevent sedimentation/pollution of the Marsh and destruction of its multi-faceted habitats. Agricultural operations on the south side of the Creek must also be monitored to ensure that runoff and sedimentation do not occur.

The sewer and water service area categories for the marsh proper should be reevaluated by the County.

AREAS OF CRITICAL STATE CONCERN

Site Name CHURCH CREEK MARSH - T19

County HARFORD Acreage 300 Date Designated JAN.1981



OTTER POINT CREEK MARSH

CLASS: Tidal Wetlands

SITE NUMBER: T 20

LOCATION:

Otter Point Creek Marsh is situated in Harford County, east of the intersection of U.S. Route 40 and Md. Route 24, and north of the community of Edgewood.

AREA DESCRIPTION:

Otter Point Creek Marsh is the largest privately owned freshwater marsh in Harford County and one of the few large freshwater tidal marshes that remains in a natural, little disturbed state in the Chesapeake Bay region. Its value was recognized in the Smithsonian Institution's report "Natural Areas of the Chesapeake Bay Region", which recommended that the 400 acres of tidal marsh be protected and that a substantial buffer area be established around the marsh area.

The vegetation in the Otter Point Creek Marsh area is quite diverse, consisting of rooted aquatics - water milfoil and wild celery in the shallow water in front of the marsh proper; broad-leafed vegetation - arum gum, spadder-dock, and pickerelweed among other - in the regularly flooded portions of the marsh; and predominantly cattail vegetation in the upper reaches of the marsh, with large stands of sweet flag also present there. Among the other species found in the marsh are wild rice, river bullrush, jewelweed, smartweed, and a species uncommon in the tidal areas, gold-club (*Orontiumaquaticum*).

The major portion of the marsh is horse-shoe shaped, with a cove marsh extending northerly toward Route 40. Most of the floodplain above the main portion of the marsh is either sewage lagoon or low-land forest, much of which is seasonally flooded. Many of the species present in the marsh are of high

value for wildlife habitat and food purposes - the cattails, wild rice, arrow-arum, spatterdock, and wild celery, among others. There is a high interspersion of vegetation types and a high water edge to marsh acreage ratios, both of which tend to diversify the habitat and food available for wildlife purposes. Twenty-five species of marsh plants were identified in one recent field visit; several more valuable marsh species are also likely to be present there.

In a recent study by the Maryland Department of Natural Resources, the Otter Point Creek and the Bush River were documented as spawning and/or nursery areas for a number of anadromous and semi-anadromous fish species. The area is also known as an important feeding and nesting area for waterfowl, blacks and mallards in particular. Other species likely to be present include mammals such as muskrats, raccoons, and possibly mink and otters; birds such as sora, and Virginia rails, green herons, great blue herons, least and American bitterns, spotted sandpipers and yellowlegs, redwing blackbirds, long-billed marsh wrens and other songbirds; assorted reptiles and amphibians such as common water snake, painted turtles, snapping turtles, green frogs and leopard frogs; and various groups of invertebrates. (The latter are valuable as a wildlife food source.)

This type marsh is also valuable as a nutrient buffer, thus helping to protect the water quality of the Otter Point Creek and the Bush River. The marsh traps a large part of the sediment delivered from upstream areas.

The sewage lagoons located above the marsh are not actively used for their original purpose and are good wildlife habitat. They are heavily used by muskrats and probably serve as good waterfowl resting and feeding areas during most of the year. Many excellent waterfowl foods are located around the lagoons. They also probably support a number of bird, mammal, amphibian, reptiles and invertebrate species.

OWNERSHIP PATTERNS:

Otter Point Creek Marsh is under multiple, private ownership.

CURRENT PLANS AND ZONING:

The majority of the actual marsh is zoned R-3 (Multi-family Residence District) which permits single family and semi-detached units, and allows by conditional use, community development projects which include townhouses and apartments. A portion of the land in the Westshore project is zoned B-3 (General Business District).

The horse-shoe shaped portion of the marsh is not planned for either water or sewer service. However, a significant amount of land which forms the smaller cove marsh to the northeast is in the W-5 category (Service in 6-10 years). The remainder of the area, including the low-land forest and other seasonally flooded sections, is designated as S/W-1 (existing sewer and water service), S/W-4 (service in 3-5 years), and S/W-5 (service in 6-10 years).

CONTINUING PLANNING AND STUDIES:

Harford County is currently undertaking a comprehensive rezoning process for the entire County.

THREATS AND PROBLEMS:

Development of portions of the marsh, pursuant to current zoning and sewer and water plans, will negatively impact the continued viability of the marsh. In addition, the County's plan for the extension of Westshore Drive across the marsh, is a significant threat to protecting the ecosystem of the marsh.

In general, the lack of adequate storm water and sediment controls in the impact area will have a deleterious effect on the marsh.

MANAGEMENT:

Current local plans for sewer and water and transportation facilities need to be revised to ensure preservation of Otter Point Creek Marsh. During the comprehensive rezoning process, the County should zone to ensure that the Otter Point Creek Marsh is preserved and that surrounding land uses are

of an appropriate type and intensity so as to minimize impact of further development in the watershed. The marsh and its buffer area should not be planned for sewer and water service. The planned crossing of the marsh by Westshore Drive should be deleted from the County's transportation plan.

All development occurring within the impact area should have adequate sediment and stormwater control mechanisms.

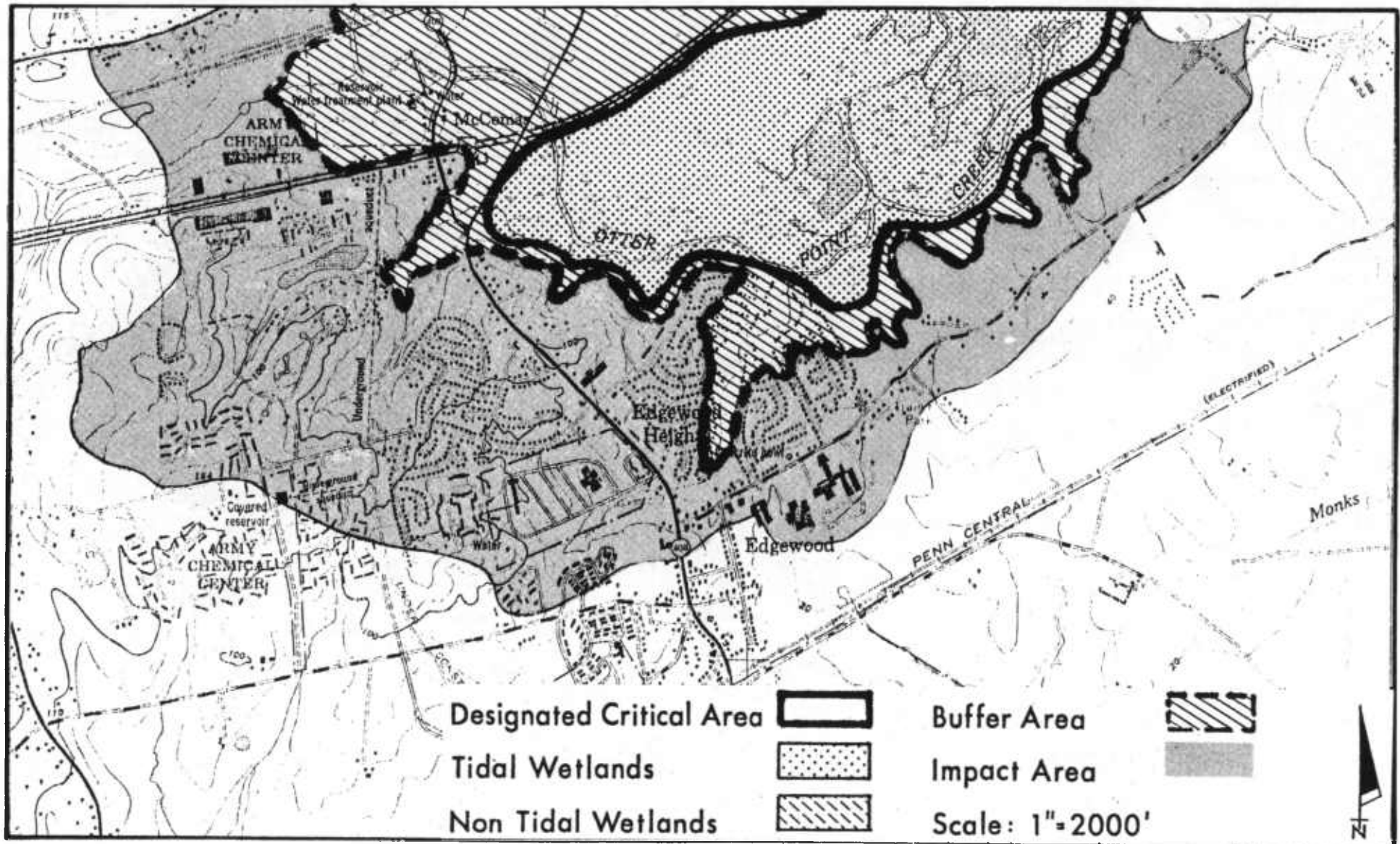
AREAS OF CRITICAL STATE CONCERN

Site Name OTTER POINT CREEK MARSH - T20

County HARFORD

Acreage 900

Date Designated JAN. 1981



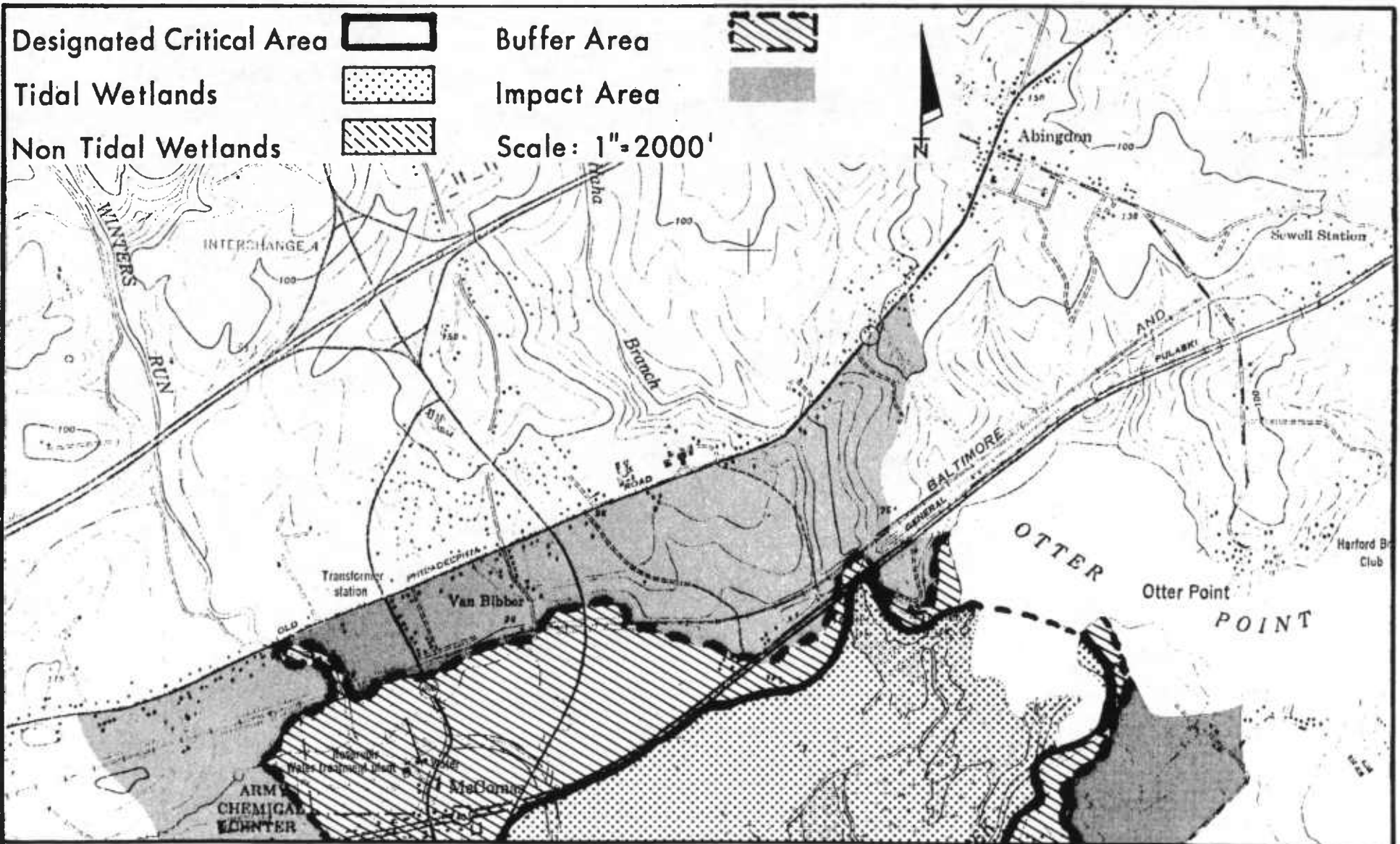
AREAS OF CRITICAL STATE CONCERN

Site Name OTTER POINT CREEK MARSH - T20

County HARFORD

Acreage 900

Date Designated JAN.1981



SWAN CREEK MARSH

CLASS: Tidal Wetlands

SITE NUMBER: T 21

LOCATION:

Swan Creek Marsh is located on Swan Creek southeast of the City of Aberdeen. A portion of the Marsh also lies within the Aberdeen Proving Grounds.

AREA DESCRIPTION:

Most of the marsh area is undeveloped. It is a productive natural area and prime wildlife habitat.

The mouth of the Swan Creek drainage basin is partially sheltered by a sandy spit which extends down from the northeast. Along the shoreline are many rooted emergent plants such as millet grass and water willow. Several small marshy areas are encountered as one moves upstream by boat. The Swan Creek Marsh area proper forms a broad delta which is 2,000 feet across. Anyone travelling upstream, however, would first encounter a mudflat which extends 600 feet downstream from the marsh vegetation and all the way across the delta. These mudflats become exposed during the lowest tides. Water here is very muddy.

This marsh encompasses approximately 110 acres and is cut by two primary channels. Arrow-arum (*Peltandra virginiana*) and pickerelweed (*Pontederia cordata*) form the bulk of the lower marsh, with wild rice (*Zizania aquatica*) emerging in the areas of decreasing water depth. Although arrow-arum and pickerelweed make up the bulk of the vegetation on this "island", rice-cutgrass (*Leersia oryzoides*) and smartweed (*Polygonum* spp.) appears quite frequently.

The upper reaches of the marsh are dominated by cattail (*Typha* spp.) and

smartweed intermingled with river bulrush (*Scirpus fluviatilis*). This eventually grades into a red maple (*Acer rubrum*) swamp. In several areas the cardinal flower (*Lobelia cardinalis*) emerges through the vegetation.

The Swan Creek Marsh supports a number of bird species. Blue and white heron, snowy egret, and red-winged blackbird were all sighted in the area. The presence of wild rice indicates this would be a prime waterfowl area during migration.

OWNERSHIP PATTERNS:

The northern portion of the marshland is privately owned and the southern portion, which lies within the Aberdeen Proving Grounds, is federally-owned. The surrounding areas are privately owned except for a portion north of the Creek which is owned by the Harford County Bureau of Recreation and Parks.

CURRENT PLANS AND ZONING:

The site is zoned A-1, Agricultural District. This zone is designed primarily for agricultural uses but does allow residential development at the density of one lot per ten acres of land with a minimum lot size of two acres.

Both the water and sewerage plans place the Marsh in the W-6 and S-6 categories. Water and sewerage services are not to be provided here within the next ten years. The areas immediately around the site are also in the S-6 and W-6 categories. Aberdeen, which lies roughly three-quarters of a mile to the west, is expanding eastward and a section of land along the eastern boundary has water and sewerage facilities in the final planning stages.

CONTINUING PLANNING AND STUDIES:

These are discussed under the next heading.

THREATS AND PROBLEMS:

Overall development pressures in the impact area, particularly because of

the eastward expansion of the Aberdeen growth center, pose a threat to the wetlands by virtue of sedimentation and runoff.

In addition, several immediate planning actions have potentially negative impacts on the wetlands. The Aberdeen Proving Ground Master Plan produced in 1980, recognizes the site as environmentally sensitive and reserves it for recreational use. This plan, however, also reserves an area adjacent to the wetlands for new military housing. Such development could cause significant problems if proper sedimentation controls are not utilized and a buffer is not maintained between the housing and the Marsh.

Another plan with a significant potential adverse effect is a possible joint use agreement between Harford County and the Aberdeen Proving Grounds. This agreement, if implemented, would allow recreational boating on Church Creek near the wetlands. Such boating could cause shoreline erosion along with increased siltation of the wetlands themselves, potentially causing damage to wildlife habitats there.

Another difficulty is presented by effluent from the Aberdeen Proving Grounds sewage treatment plant which now discharges into Swan Creek. This pollution threat will subside, however, if the plant's discharge point is moved in 1982 as planned.

MANAGEMENT:

A primary concern is the regulation of construction activity in the impact area to prevent sedimentation and runoff and to avoid degradation of water quality and siltation of the wetlands. To this end, the County and the Aberdeen Proving Ground should provide an environmentally sound development program for preserving the Marsh from the deleterious effects of surrounding development. In particular, the recreational boating issue should be studied closely to ascertain potential damage to the shoreline before any such agreement is consummated. Aberdeen Proving Grounds also must provide a buffer area so that proposed military housing construction does not impinge on the wetlands, and should also ensure that runoff is contained on the housing site.

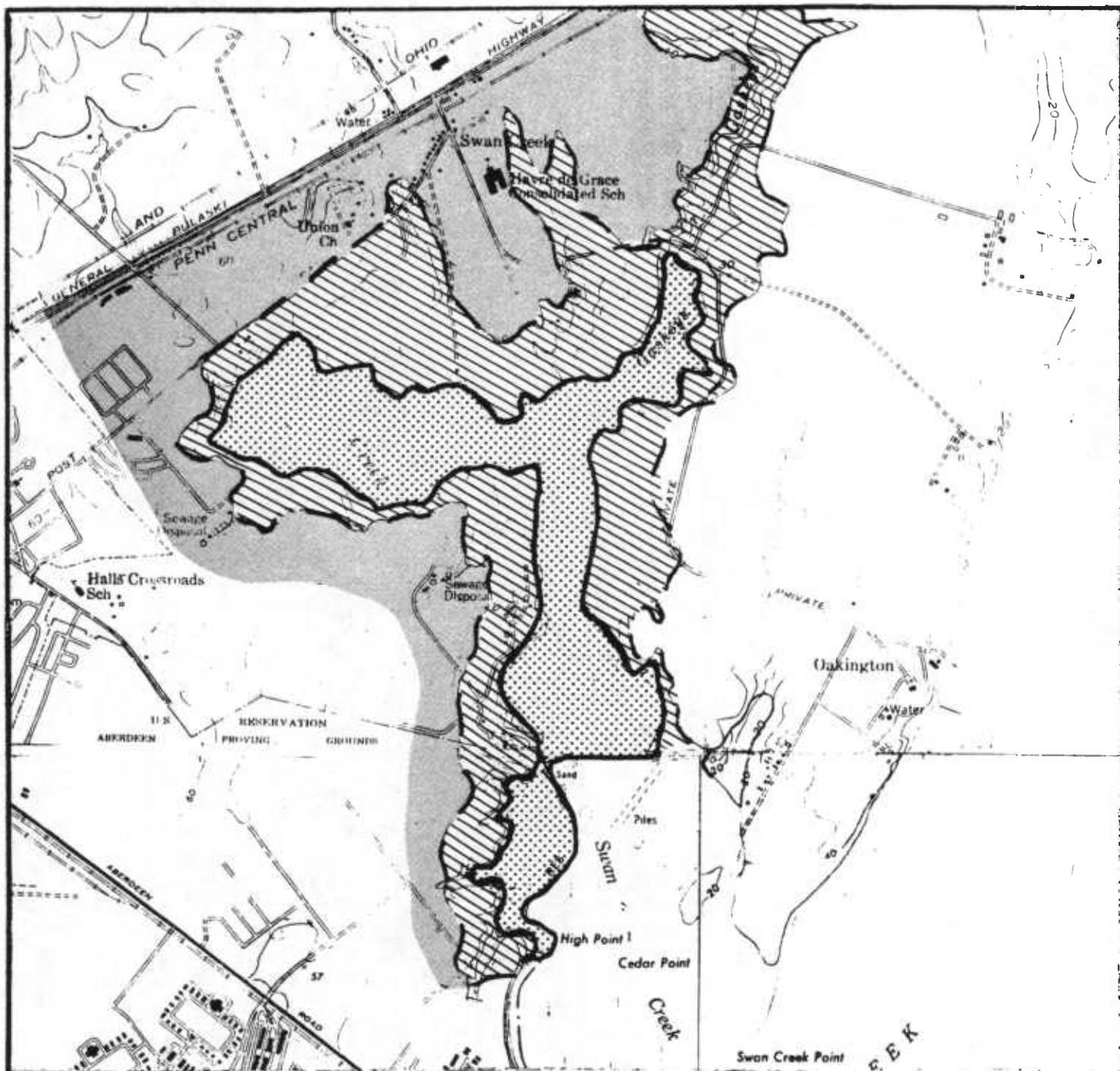
AREAS OF CRITICAL STATE CONCERN

Site Name SWAN CREEK MARSH - T21

County HARFORD

Acreage 325

Date Designated JAN.1981



Designated Critical Area



Buffer Area



Tidal Wetlands



Impact Area



Non Tidal Wetlands



Scale: 1"=2000'



Chapter Two

NON-TIDAL WETLANDS DESIGNATED AREAS

CHAPTER TWO: NON-TIDAL WETLANDS

DESIGNATED AREAS

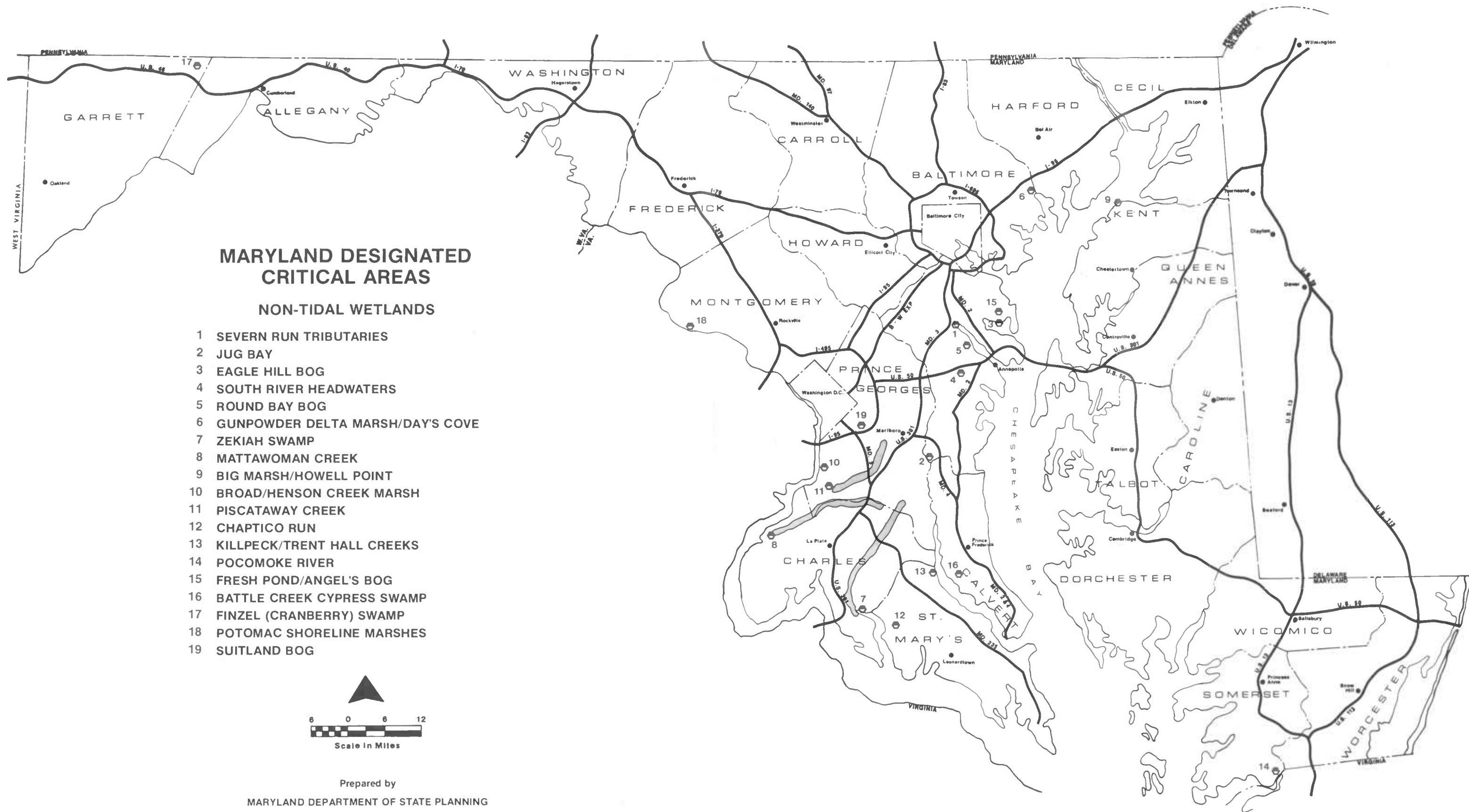
I. DEFINITION

Non-tidal wetlands encompass a wide range of area types, from the marginal areas between tidal wetlands and dry land, to upland marshes distant from coastal influences. The latter type is relatively rare in Maryland. About 90 percent of these wetlands are in a flood plain. Unlike tidal wetlands, there is no comprehensive inventory and set of maps identifying their types and locations. The map on the following page shows the location of the 19 designated non-tidal wetlands. The definition of non-tidal wetlands for purposes of the Critical Areas Program is as follows:

"Non-Tidal Wetlands" are those transitional lands between terrestrial and aquatic systems that are not regularly subject to tidal influence. The water table is at or near the surface, or the land is covered by water up to two meters deep. These conditions must persist long enough to promote the formation of hydric¹ soils or to support the growth of hydrophytes.² This class includes all wetlands not regulated under the State Wetlands Law, Natural Resources Article, Title 9.

¹ Hydric Soils - Soil that is wet long enough to periodically produce anearobic (no oxygen) conditions, thereby influencing the growth of plants.

² Hydrophytes - Moisture-loving plants.



II. NON-TIDAL WETLANDS MANAGEMENT POLICY

In general, the management policy for non-tidal wetlands is the same as for tidal wetlands. Therefore, the reader is asked to refer to the "Wetlands Management Policy" discussion in Part I, Tidal Wetlands. There are, however, some program differences which will be noted here.

First, the basic difference in the tidal and non-tidal classes, and basis for the distinction between the definition of the classes, is the applicability of the State Tidal Wetlands Program. This means that the principal tool for regulating direct alterations of tidal wetlands is not available for non-tidal wetlands. A March, 1980 study by the Department of Natural Resources, "Non-Tidal Wetlands of the Patuxent River Watershed", explored the management options for non-tidal wetlands. This study was prepared in response to Senate Joint Resolution 18 of the 1979 General Assembly. The study found that 89 percent of the non-tidal wetlands in the Patuxent Basin could be regulated directly through use of the Watershed Permit Program. In addition, the study identified six other State and Federal programs that are key in regulating and managing non-tidal wetlands. Some of these are limited in their geographic applicability as can be seen by their names:

1. Maryland Scenic Rivers Act;
2. Soil Conservation District Program;
3. Patuxent River Watershed Act;
4. Critical Areas Program;
5. Federal Flood Insurance Program; and
6. Corps of Engineers 404 Permit Program.

Descriptions of these programs are provided in the referenced Department of Natural Resources report and/or the previous generic class discussion on tidal wetlands.

The Patuxent Non-Tidal Wetlands report concluded that establishment of non-tidal wetlands regulatory program analogous to the tidal wetlands program has merit, but consideration of that should be deferred pending availability of more complete inventory information currently under

preparation by the U. S. Fish and Wildlife Service. Meanwhile, it concludes that the Watershed Permit Program applies to most of the non-tidal wetlands.

Those areas not subject to this program are:

1. Non-tidal wetlands not within the 100-year floodplain; these are not controlled by State waterway construction/obstruction permits.
2. Agricultural drainage systems affecting less than 2500 acres; activities affecting the course, current or cross-section of waters of the State having 400 acres or less of upstream drainage area; and activities affecting trout streams with less than 100 acres of upstream drainage areas.

These criteria bear no direct relationship to the inherent value or uniqueness of particular wetlands and this may leave some important areas relatively less protected.

In addition, it must be considered whether a watershed permit is an adequate or appropriate vehicle in the long run for protection of those non-tidal wetlands to which it applies, and whether lack of a complete or adequate inventory precludes the development and proposal of protective legislation.

In view of this discussion and in the light of the information contained in the Department of Natural Resources report, the following management policies and recommendations, in addition to those in the preceding tidal wetlands discussion are stated:

1. A complete non-tidal wetlands inventory should be completed as expeditiously as possible.
2. The Departments of Natural Resources and State Planning and other interested parties should consider cooperatively preparing legislation for management of non-tidal wetlands for future introduction to the General Assembly.

III. AREA DESCRIPTIONS AND MAPS

CLASS: Non-Tidal Wetlands

SITE NUMBER: TN 1 - TN 14

The following designated non-tidal wetlands are also designated tidal wetlands. In all cases, the two types of wetlands are either contiguous or close enough to one another to be considered as a single area. Therefore, descriptions and maps of TN 1 through TN 13 are presented in Chapter One, and TN 14 is presented in Chapter Four.

<u>Site Number</u>	<u>Name</u>	<u>Refer to Page</u>
TN 1	Severn Run Tributaries	1-24
TN 2	Jug Bay	1-32
TN 3	Eagle Hill Bog	1-40
TN 4	South River Headwaters	1-44
TN 5	Round Bay Bog	1-52
TN 6	Gunpowder Delta Marsh/Day's Cove	1-55
TN 7	Zekiah Swamp	1-61
TN 8	Mattawoman Creek	1-68
TN 9	Big Marsh/Howell Point	1-74
TN 10	Broad/Henson Creek Marsh	1-78
TN 11	Piscataway Creek	1-82
TN 12	Chaptico Run	1-88
TN 13	Killpeck/Trent Hall Creeks	1-92
TN 14	Pocomoke River	4-3

FRESH POND/ANGEL'S BOG

CLASS: Non-Tidal Wetlands

SITE NUMBER: N 15

LOCATION:

Fresh Pond lies within the Mountain Road peninsula of Anne Arundel County, located on the north side of Mountain Road (Md. Route 177), west of Forest Glen Drive.

AREA DESCRIPTION:

The site consists of a twelve-acre pond and a twenty-three acre shrub swamp and bog, surrounded by forest and farm land. The pond is open water with vegetation along the edges including fragrant water lily, swamp loose-strife, and bladderwort. The shrub swamp and cranberry bog (unusual in itself) surround the pond, and contain leatherleaf (a rare swamp shrub in Maryland), pepperbush, red maple, bull rush, sedge, cranberry, sphagnum, and swamp loose-strife. Most notable of the plant life are the sundew and round leaf sundew, and the pitcher plant, which are insectivorous plants. Rare plants include pipewart and yellow-eyed grass.

The hardwood forest which helps protect the pond and bog areas is a natural haven for a variety of wildlife, particularly bird life. Species identified at the site include northern cricket frog, painted turtle, bull frog, purple martin, mallard, great blue heron, kingfisher, wood thrush, scarlet tanager, red-bellied woodpecker and bobwhite. Deer and small game are also found. The forest canopy includes chestnut oak, white oak, black oak and pitch pine. The understory is comprised of chestnut oak, white oak, black gum, dogwood, and hickory. The shrub layer is sparsely populated with huckleberry, blueberry, holly, azalea, and mountain laurel.

The unusual mix of plant life found here is attributable to the site's location within a natural transition zone for a number of plant species more common to areas and climates further to the north and south.

OWNERSHIP PATTERNS:

Land ownership immediately around Fresh Pond is comprised of three major holdings. Along the western boundary of the pond subdivision development is underway, severely limiting the provision of a buffer area. However, portions of this development directly adjacent to Fresh Pond have been placed in floodplain reservation.

CURRENT PLANS AND ZONING:

The current zoning classification for Fresh Pond and adjoining lands within the impact area is zoned Residential 1, which permits residential development with minimum lots of 40,000 square feet.

Water and Sewer Service facilities are not planned for Fresh Pond and its impact area. Development can only be supported through on-site systems.

CONTINUING PLANNING AND STUDIES:

None.

THREATS AND PROBLEMS:

Increasing development directly adjacent to Fresh Pond and consequent problems associated with development (e.g., increased runoff, sedimentation, stripping of the natural vegetative cover) will seriously affect the site and change its character. The Bodkin Point Subdivision is immediately west of, and drains onto, the site. Only a small portion of the subdivision along the Fresh Pond area has been placed in the protective floodplain reservation category. In addition, runoff from farming operations adjacent to this area constitute a potential threat if not properly managed.

Farming operations on the northeast shore of Fresh Pond constitute a threat to the water quality and bog vegetation due to siltation from pigs eroding the earth along the shoreline and depositing fecal material in the pond.

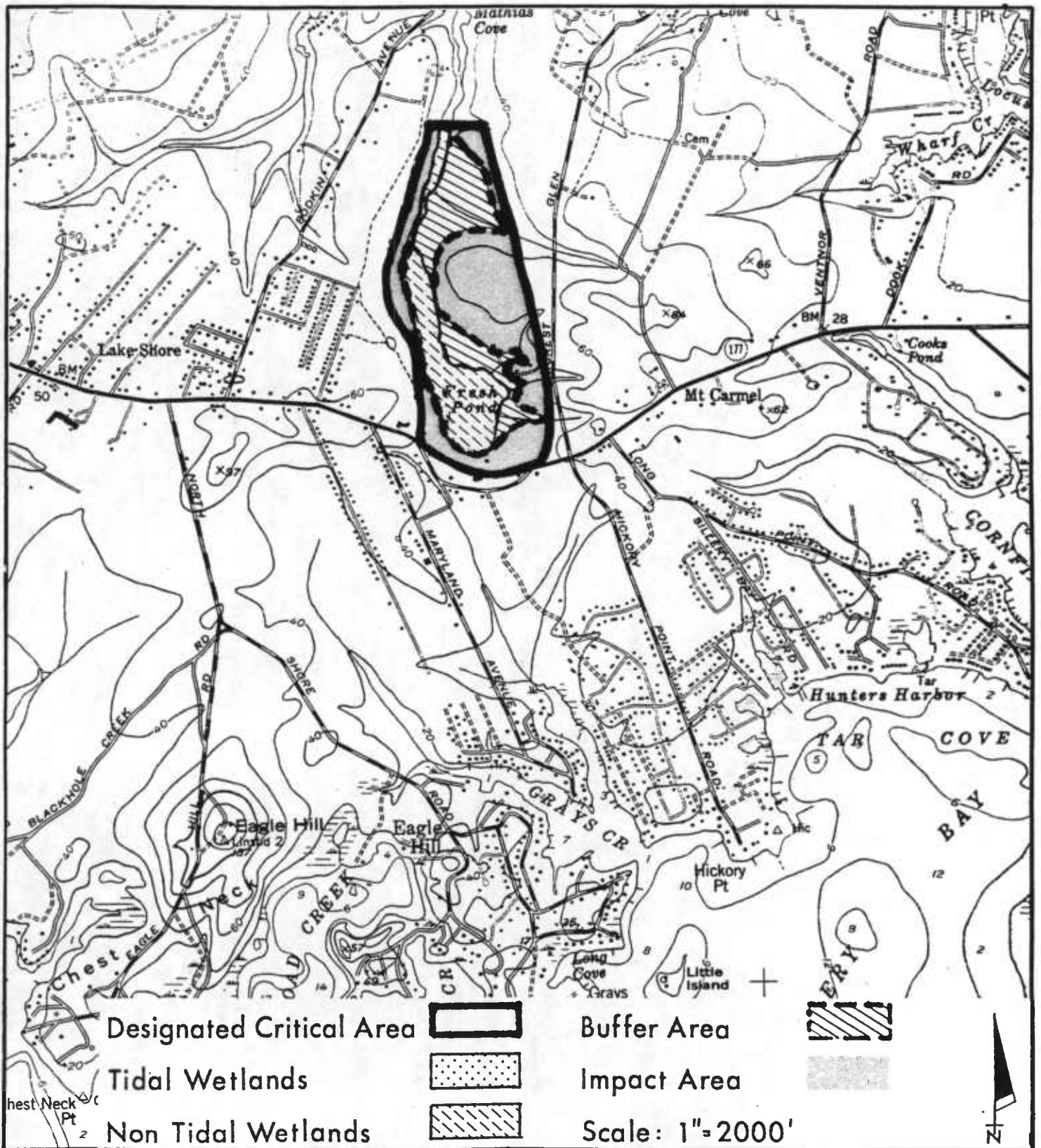
MANAGEMENT:

Management of the impact area for Fresh Pond requires at least the maintenance of the existing zoning classification which permits one dwelling unit per acre in the area. The County should review the adequacy of this zone to protect the bog. If necessary, an effort should be made to rezone the pond and floodplain to an open space category. Emphasis should be placed on obtaining protective easements during the processing of future subdivision plans. Farming operations should be reviewed by the Soil Conservation District, and improvements made where necessary.

AREAS OF CRITICAL STATE CONCERN

Site Name FRESH POND / ANGEL'S BOG - N15

County ANNE ARUNDEL Acreage 200 Date Designated JAN.1981



BATTLE CREEK CYPRESS SWAMP

CLASS: Non-Tidal Wetlands

SITE NUMBER: N 16

LOCATION:

The Battle Creek Cypress Swamp is located in the southern part of Calvert County, and is intersected by Maryland Route 506 (Bowens Sixes Road), approximately 5 miles west of Maryland Route 4.

AREA DESCRIPTION:

The Battle Creek Cypress Swamp is located at the headwaters of the creek for which it is named in an area significant in the early history of Calvert County. Poor drainage and shallow depressions in the steeply dissected terrain make the Battle Creek Cypress Swamp typical of coastal plain swamps. The swamp contains one of the last remaining stands of bald cypress in Maryland, the only Cypress swamp on the Western Shore, and one of the most northerly in the United States. Large cypress trees in the swamp reach 100 feet in height and four feet in diameter.

The wood of the bald cypress is valuable for its resistance to decay. Cypress from this area was widely used in the County prior to its designation as a sanctuary. In addition, other rare vegetation may be found such as paw-paw, tupelo gum, and sweet gum.

The swamp is a natural preserve and is a valuable habitat for many kinds of frogs, turtles, lizards, snakes, fish and birds. Among those to be found are opossum, mink, red-headed woodpecker, pileated woodpecker, and pinewoods tree frog.

OWNERSHIP PATTERNS:

The principal owner of the swamp is the Nature Conservancy holding 100 acres in two parcels. Several large land holdings surround the swamp site and are devoted to agriculture and open space. Calvert County owns 20 acres on Gray Road adjacent to the swamp where a nature center is located.

CURRENT PLANS AND ZONING:

All of the swamp area is in either the Conservation Zone or the Flood Plain Zone. The Conservation Zone is limited to open space type land uses such as agriculture, forestry, parks and recreation areas. Single-family dwellings are permitted on parcels of five or more acres. The Flood Plain Zone is basically the same, but no dwellings are permitted.

Much of the land west of the swamp and including the buffer area is zoned A-1 which does permit single-family dwellings on parcels of one to five acres, depending on individual circumstances.

The County Water and Sewer Plan places the Battle Creek Cypress Swamp in the no-planned service category. Development can only be supported through on-site systems.

CONTINUING PLANNING AND STUDIES:

The Calvert County Comprehensive Land Use Plan is currently being revised; however, no changes are envisioned which will affect the swamp.

A Battle Creek Cypress Swamp Committee has been established by the County Commissioners and charged with making recommendations for very limited use (education and tourism) consistent with the preservation and protection of the swamp. One of the management techniques that has been suggested is that the Cypress Swamp Committee monitor, evaluate, and comment on any changes in the general area which may affect the swamp. A nature center and an elevated trail have recently been constructed. Educational exhibits and programs are offered under the direction of a naturalist.

THREATS AND PROBLEMS:

The 120 acres under the ownership and control of the Nature Conservancy and Calvert County appear to be exempt from future development. The zoning, topography, and soil type severely limit development of adjacent lands.

Battle Creek and the swamp could be adversely affected by agricultural activities in the watershed.

MANAGEMENT:

The Nature Conservancy ownership of the swamp insures its preservation as a sanctuary. However, additional management techniques may be required within the critical area, the proposed buffer area, and the general area surrounding the swamp.

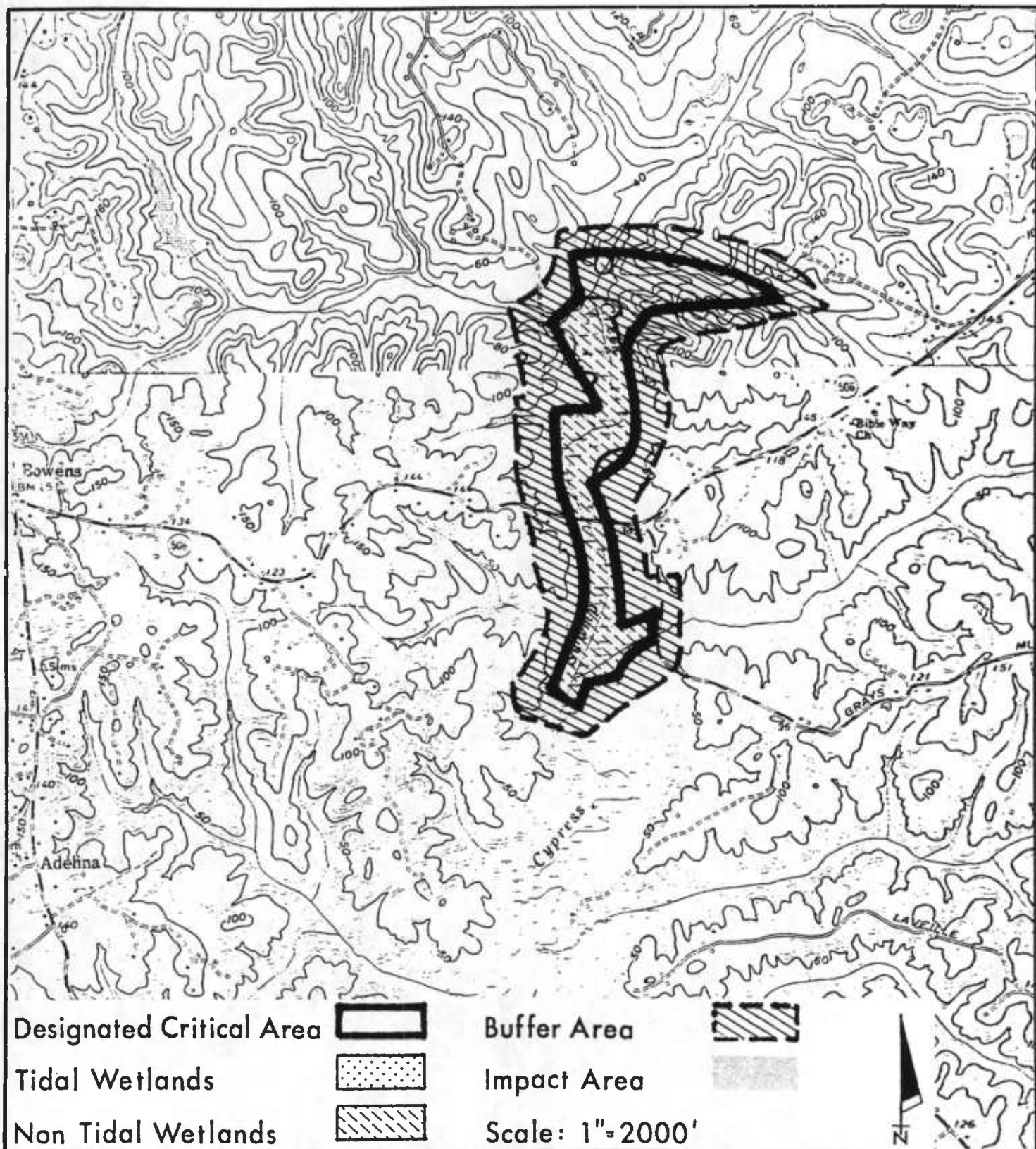
The following is suggested:

1. Limit development to those uses for which environmental compatibility can be demonstrated.
2. Consider rezoning the portion of the buffer area now zoned A-1 to conservation.
3. Consider purchase of the buffer area or purchase of development rights.
4. Analyze all major land use alteration and development proposals for their effects on the swamp area.
5. Strictly enforce existing regulations for the prevention of sedimentation.
6. Grant only those special exceptions and zoning changes which are demonstrated to have no adverse effects on the swamp property.

AREAS OF CRITICAL STATE CONCERN

Site Name BATTLE CREEK CYPRESS SWAMP - N16

County CALVERT Acreage 125 Date Designated JAN. 1981



FINZEL (CRANBERRY) SWAMP

CLASS: Non-Tidal Wetlands

SITE NUMBER: N 17

LOCATION:

Finzel Swamp also known as Cranberry Swamp, is located in the northeastern portion of Garrett County, lying immediately east of the ridge line of Little Savage Mountain, 1½ miles northeast of the U. S. 48/MD 546 Interchange.

AREA DESCRIPTION:

Finzel Swamp is the headwaters of Savage River. It is an inland wetland of a type that is rare in Maryland. The highest point in the vicinity, Sampson Rock (2,934 feet), lies to the immediate northeast. The Little Savage and Big Savage Mountain Ridges form a cradle for the Swamp and control the natural drainage.

The flora of Finzel Swamp exist in a refugium, a microclimate of relict colonies which survived the retreat of the glaciers that originally forced them south. These are plants endemic to northern habitats and uncommon to the State of Maryland. The wettest portions of the Swamp are thick with blueberries and viburnum. In the drier areas, rhododendron is the dominate shrub, with a variety of tree species including hemlock, oak, witch hazel, red maple and yellow birch. On still higher ground, red maple, red oak, witch hazel, hickory and sassafras predominate, along with continually profuse rhododendron. The Swamp provides a prime wildlife habitat for muskrat, fox, mink, deer, and beaver among others. The rare wild turkey also lives in this area, and it is thought that the bog turtle may also inhabit the Swamp. Vegetation occurrences which are rare in Maryland include tamarack, wild calla, cranberry, red spruce, yellow birch, gold thread, and Canadian burnet.

OWNERSHIP PATTERNS:

The Nature Conservancy controls 312 acres, including the designated Swamp area. The Conservancy's goal is to acquire 500 acres. The remaining area surrounding the Swamp is under multiple private ownership.

CURRENT PLANS AND ZONING:

Zoning regulations have not been adopted for this part of Garrett County. The Finzel Swamp is included in "A Development Plan for Garrett County", which was adopted by the Board of Garrett County Commissioners on May 20, 1974. The Plan encourages the voluntary private acquisition of the Swamp and adjacent areas to protect them from the "intrusion of pesticides or other adverse water-borne influences." There are no water and sewer service facilities planned for this area.

CONTINUING PLANNING AND STUDIES:

The scientific staff at Frostburg State College has been conducting studies of plant succession in Finzel Swamp for some time, and through these studies became fearful that human activity, fire, and beaver dams would cause its gradual destruction. They called on the Nature Conservancy to help save this outdoor laboratory. The Conservancy has begun a full-scale acquisition program to preserve 500 acres of the Finzel Watershed. The Swamp area continues to be studied as a natural science field laboratory by Frostburg State College.

THREATS AND PROBLEMS:

The Swamp is located near an interchange of the recently completed National Freeway. While there are currently no known plans for development, any changes in land use in the swamps watershed could threaten the Swamp.

MANAGEMENT:

Finzel Swamp was selected by the Nature Conservancy for preservation efforts not only because of its highly significant natural characteristics, but also because its comparatively small size gives a realistic

opportunity to create an "ecologically defensible" natural preserve. The Swamp can be made as safe as possible from adverse development of adjoining property through fee simple purchase of the immediate watershed.

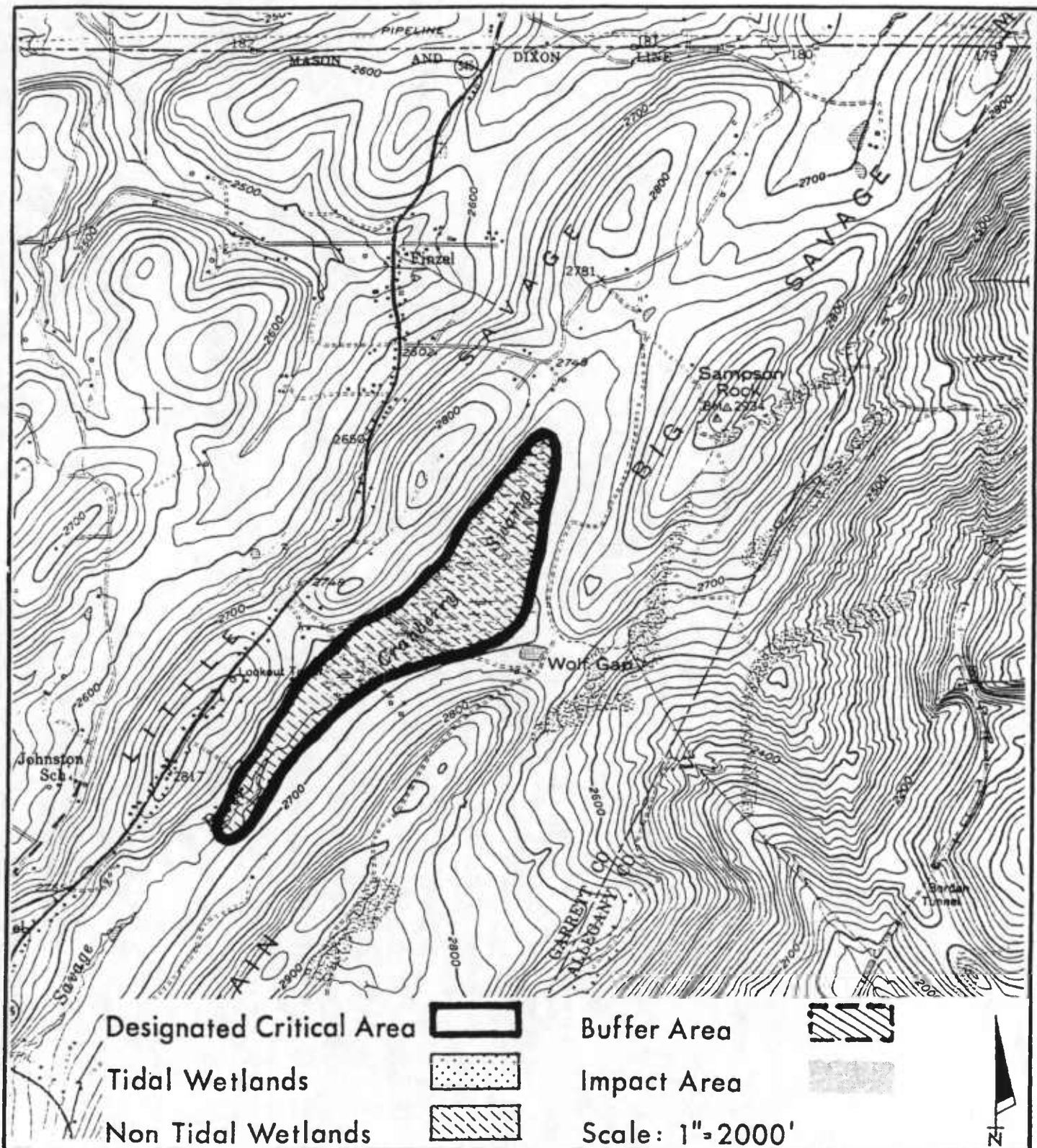
The program to assure protection of Finzel Swamp should include:

1. Completion of the Conservancy's land acquisition program by voluntary negotiation for purchases.
2. Continued management and scientific use by Frostburg State College.
3. Possible development of an elevated boardwalk to accommodate a self-guided interpretive trail, provided that suitable means can also be developed to prevent destructive effects of unauthorized entry.
4. The County should evaluate whether it would be desirable and necessary to protect this area through development of detailed plans and creation of appropriate zoning.

AREAS OF CRITICAL STATE CONCERN

Site Name FINZEL (CRANBERRY) SWAMP - N17

County GARRETT Acreage 100 Date Designated JAN.1981



POTOMAC SHORELINE MARSHES

CLASS: Non-Tidal Wetlands

SITE NUMBER: N 18

LOCATION:

Floodplain areas along the Potomac River in Montgomery County, near the mouth of Seneca Creek.

AREA DESCRIPTION:

This site includes a series of wetlands scattered along the Potomac River. The wetlands are Hughes Hollow, Seneca Swamp, and the C & O Canal. A description of each wetland and its setting can be found below:

1. Hughes Hollow, also known as the McKee-Beshers Wildlife Management Area, is located four miles south of Poolesville.

The area is a highly dissected mosaic of different wetland habitats interspersed with sod farm and deciduous forest. The wetland is composed of five different habitat types. The largest type is an area of 355 acres covered by stands of a green ash-pin oak-red elm association, much of which is seasonally flooded to a depth of several inches. The maturity of these stands varies as indicated by an average DBH range of 6 to 18 inches. Shrub swamp, composed of button-bush, several moist-site hardwoods and numerous aquatic plants, covers 165 acres. Wooded swamp is present over 130 acres and is composed chiefly of green ash with many shrubs and aquatic plants. Much standing dead timber is present. Deep marsh and open water covers about 60 acres. Vegetation is chiefly rooted and floating aquatics and emergents. Interspersed with wetland and deciduous forest are sod farm fields

and fencerows. These provide open areas and increase the edge-opening ratio which is valuable to a diverse wildlife community.

2. Seneca Swamp is located just north of the Potomac River and west of Seneca Creek.

Seneca Swamp is a 135-acre wetland comprised of 50 acres of shrub swamp and 85 acres of wooded swamp. The shrub swamp lies toward the middle of the site and is found in three distinct clumps. Typical of the shrub swamp is a very sparse understory of willow and green ash. Hibiscus comprises the bulk of the dense herbaceous layer, though willow and buttonbush also occur. The herbaceous layer is only moderately dense, but is quite diverse. The wooded swamp is characterized by an open canopy, virtually no understory or shrub layers and a very dense herbaceous layer. Green ash is the dominant canopy species with a few specimens of pin oak. DBH's range from 9 to 12 inches. Moneywort and jewel-weed comprise the bulk of the ground cover. Scattered stands of red maple can also be found toward the periphery of the area. The site is contiguous with the McKee-Beshers Wildlife Management Area. Seneca Swamp is a valuable area for wildlife.

3. Small Wetlands areas are located south of the Dierssen Waterfowl Sanctuary between the Canal and the Potomac River, and just west of the mouth of Seneca Creek.

These sites are characterized by typical riverbottom vegetation and a small shrub swamp. The shrub swamp is covered mostly by buttonbush and black willow with much arrow-arum and small areas of open water. Wood ducks and green heron nest in the swamps. The avian community of this area is noteworthy for the uncommon resident and migratory species likely to be encountered there. The remains of the aquaduct over Seneca Creek and an old building, both constructed from native rock quarried in the area, add historical interest to this riverside natural area. The old tow path for the canal runs the length of the site and allows easy passage along this scenic stretch of the Potomac River.

OWNERSHIP PATTERNS:

1. Hughes Hollow or the McKee-Beshers Wildlife Management Area is owned by the State of Maryland and is managed by the Fish and Wildlife Administration.
2. The Seneca Swamp is located in the Seneca State Park, and is also owned by the State, and is managed by the State Park Service.
3. The C&O Canal wetlands are part of the C&O Canal National Historic Park and are owned by the Federal government.

CURRENT PLANS AND ZONING:

The current County zoning classification in the Hughes Hollow and Seneca Swamp area is agricultural, which allows 25-acre minimum lots, and rural, allowing 5-acre minimum lots. This area is included in the "No Planned Service" category in the County Water and Sewer Plan. Upstream areas in the Seneca Creek Watershed are served, or planned to be served by water and sewerage.

In 1971, Public Law 91-664 established the Chesapeake and Ohio Canal National Historical Park. Local planning and zoning regulations are not applicable within the Park. In 1976, the National Park Service prepared and published a general plan for managing the Park. According to this plan, Area "3" of the Critical Area Potomac Shoreline Marshes, which is located near Katie Island, is in Section 5 of the C&O Canal Park and is zoned "C-Short Term Recreation." Area "3" which is located west of Seneca Creek, is in Section 6 of the C&O Canal Park and is zoned "A-National Interpretive Center."

CONTINUING PLANNING AND STUDIES:

The approved and adopted Master Plan for the Potomac Subregion was published by Montgomery County in May 1980. This plan proposes to reconfirm the established low density residential pattern of development. The Darnestown Planning District, the western most district of the Potomac Subregion, has Seneca Creek as its western boundary and is of some significance to the Seneca Wetlands. This area was zoned to provide a suitable transition between the rural zone and the more suburban areas to the east.

A second plan, published by Montgomery County in the Spring of 1980 was the Agricultural Preservation Plan. This plan proposed zoning that will preserve prime agricultural land in the area west of Seneca Creek to the county line.

Program Open Space has been instrumental in acquiring islands in the Potomac. These islands acquired through the capital program of the Department of Natural Resources are managed by the Wildlife Administration. The acquisition of islands is an activity that has been ongoing over the last fifteen years with the most recent purchase occurring in 1980.

THREATS AND PROBLEMS:

No major or significant imminent threats to these wetlands are known.

MANAGEMENT:

County and federal plans are sensitive to the environmental qualities of the Potomac Shoreline. The Montgomery County Potomac Subregion Master Plan proposes rezoning along the Potomac River to "provide visual continuity with the C & O Canal National Park and to preserve those environmentally sensitive and naturally unique areas worthy of preservation by discouraging development of the ravines and steep slopes adjacent to the Canal Property."

The Federal C & O Canal National Park plan calls for "the stabilization and a partial restoration of the canal and its structures, the preservation of the natural area surrounding it, the interpretation of historical and natural values associated with the canal and the provision of outdoor recreation."

The current local plans and zoning in the immediate vicinity of these wetlands appear adequate for their continued protection. The fact these areas are publicly owned also is important to their proper management.

Continued attention to strong storm water management and sediment control practices in areas which drain to these wetlands is also necessary. Steps can be taken to prevent a worsening of the situation by programs recommended

in the County's adopted functional Master Plan for the Seneca Creek which includes specific recommendations for the protection and improvement of the stream.

The Wildlife Administration manages the wetlands of the McKee-Beshers Wildlife Management Area and the islands of the Potomac River for waterfowl usage.

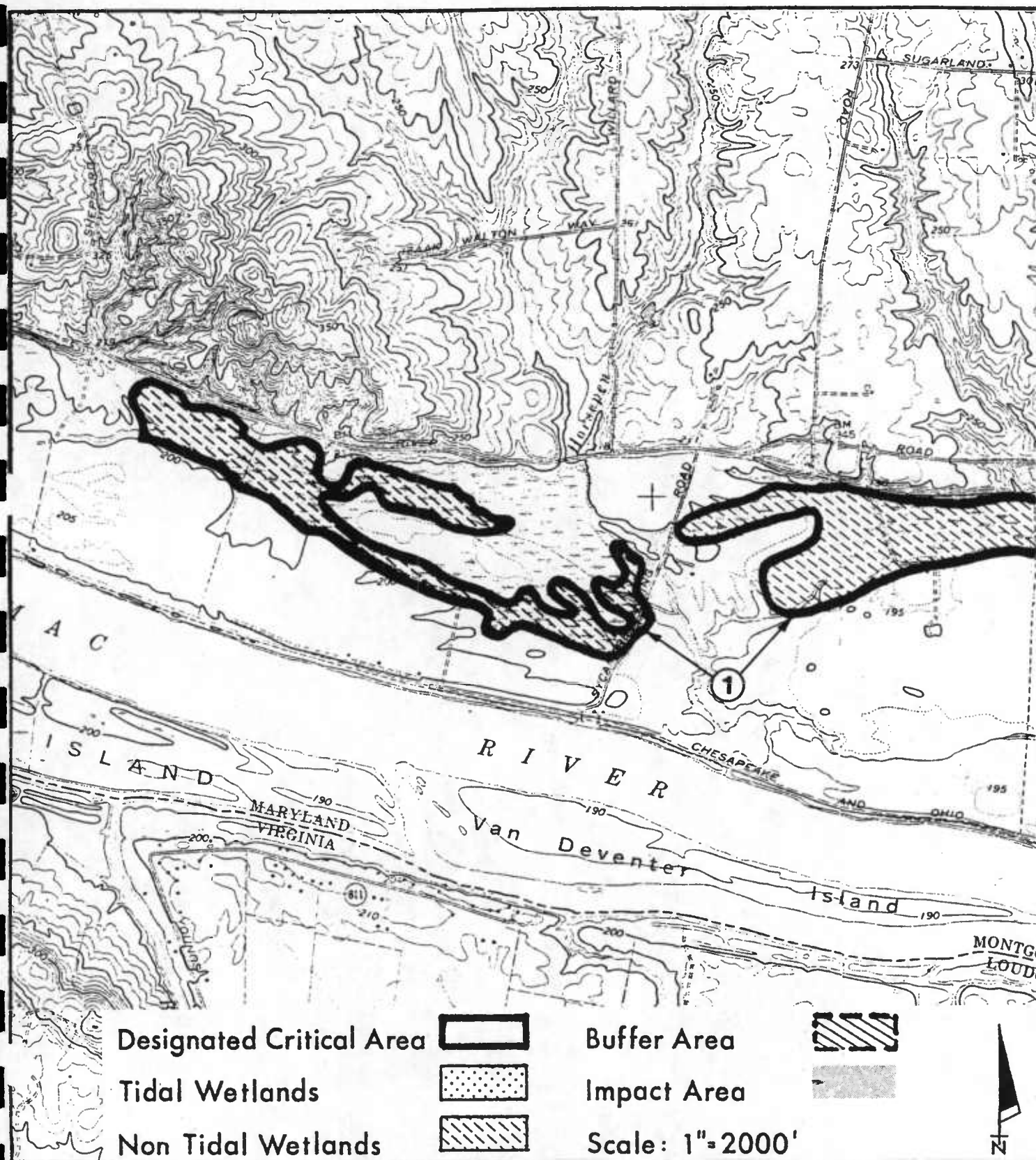
Additional investigation is needed to determine the archeological value of these areas.

The Potomac River in Montgomery County has been designated a Scenic River under provisions of the Maryland Scenic Rivers Act of 1968. The Scenic Rivers Program is charged with protecting the scenic, fish, wildlife and other values of all designated scenic rivers. Should a Scenic River Plan be developed for the Potomac River, it should include management provisions for the adjacent wetlands identified here as critical areas.

AREAS OF CRITICAL STATE CONCERN

Site Name POTOMAC SHORELINE MARSHES-N18

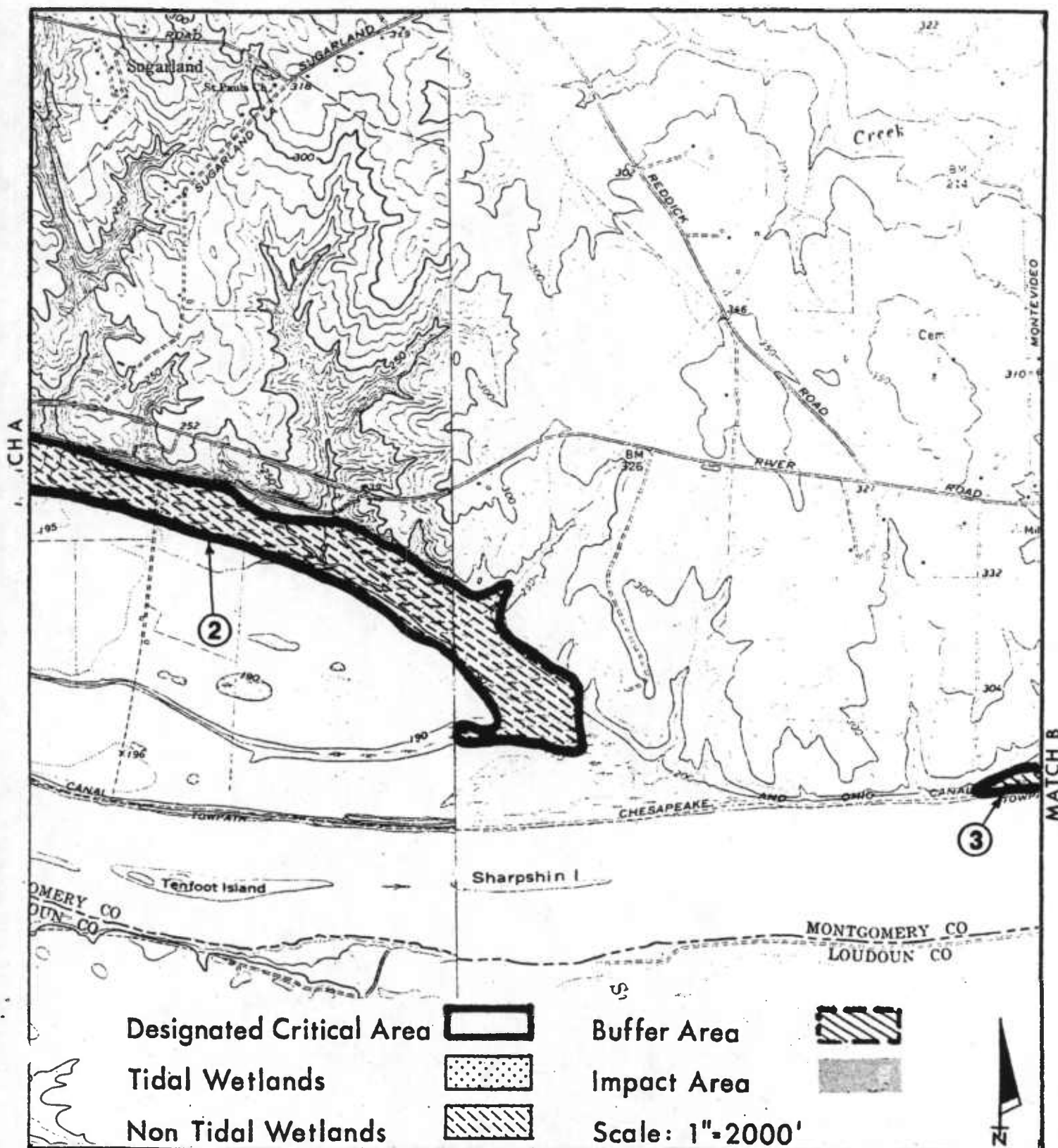
County MONTGOMERY Acreage 500 Date Designated JAN. 1981



AREAS OF CRITICAL STATE CONCERN

Site Name POTOMAC SHORELINE MARSHES - N18

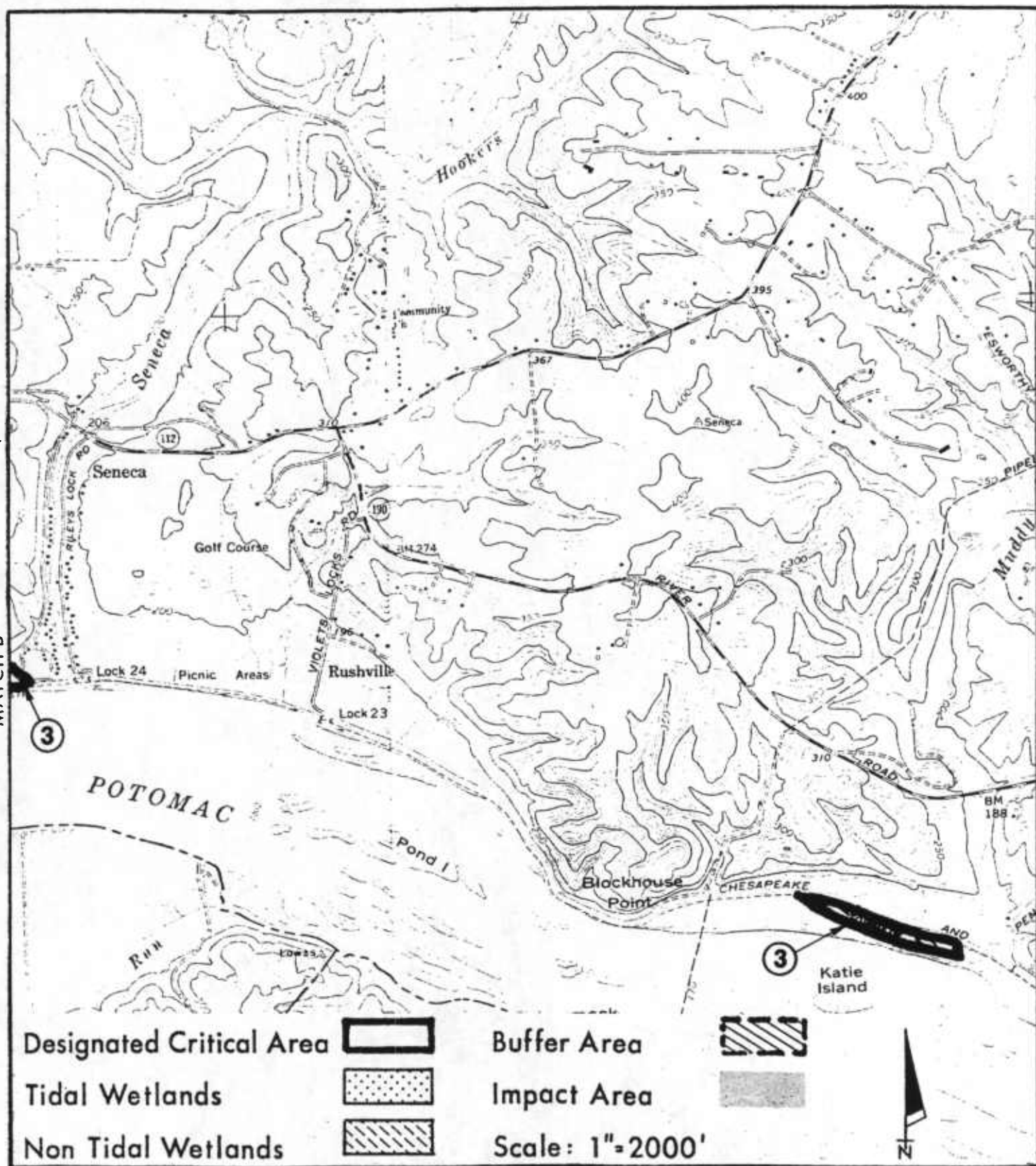
County MONTGOMERY Acreage 500 Date Designated JAN.1981



AREAS OF CRITICAL STATE CONCERN

Site Name POTOMAC SHORELINE MARSHES - N18

County MONTGOMERY Acreage 500 Date Designated JAN.1981



SUITLAND BOG

CLASS: Non-Tidal Wetlands

SITE NUMBER: N 19

LOCATION:

The Suitland Bog is located in Prince George's County at the northern end of a 20-acre parcel owned by the Maryland-National Capital Park and Planning Commission. This parcel lies in the northeast quadrant of the intersection of Suitland Parkway and Suitland Road.

AREA DESCRIPTION:

The Suitland Bog, a cedar swamp, is a small remnant of the Magnolia Virginiana Bogs which at one time were considerably more extensive in the region.

The Bog provides a habitat for a number of unique species of vegetation including several varieties of insectivorous plants such as the common pitcher plant, Sarracenia, purpurea and the common sundew, Drosera rotundifolia. Other unusual plants include the pipewort, white fringed orchid, and bog club moss.

The Bog has a high value for scientific and educational uses due to its proximity to a large urban area and the fact that it is the only remaining Bog of its type in the region. Its role as a habitat for unique plant species also makes it an environmentally significant asset.

OWNERSHIP PATTERNS:

The Bog is owned by the Maryland-National Capital Park and Planning Commission and land to the north and east is owned by residential developers. A large open parcel with one home lies south to southeast and to the west

lies a completed residential development of about 20 units. Suitland Road abuts to the south and, below Suitland Road, multiple property ownerships exist.

CURRENT PLANS AND ZONING:

The Bog itself is zoned R-R, a low density residential classification allowing two units per acre, although it is publicly owned. Lying to the north and east are large parcels zoned R-T, a classification allowing townhouses at a density of 10 units per acre. A bit further to the east, a large parcel of land is zoned R-18, a classification allowing garden apartments. Land to the west is zoned R-R and to the south, below Suitland Road, much of the land is zoned R-T.

The entire area surrounding the Bog is, or will soon be served by community water and sewerage systems. Virtually all of this land not currently served by water or sewerage will be served within 1-2 years. Serving this land, however, will not require traversing the Bog with water or sewerage pipes. Development to the north and east can be served from major trunk lines located north of the Bog.

CONTINUING PLANNING AND STUDIES:

Prince George's County Planning staff is currently revising the master plan for the Suitland-District Heights sector where the Bog is located. The new plan, scheduled for adoption in 1982, will include strategies for protecting the Suitland Bog. The County has also performed a hydrologic study to determine the location and direction of flow of the underground water supplying the Bog and also to ascertain if increasing development of the area is polluting or lowering the level of this underground water supply. Managing this water supply is extremely important since the Bog depends on this hydrological resource for its survival. Finally, a management and park study has been conducted to develop recreational uses for the Bog itself as well as for the County-owned land surrounding it.

THREATS AND PROBLEMS:

The Bog is virtually surrounded by existing and proposed residential subdivisions. The Bog itself is lower than the surrounding developed/developing area and faces immediate danger from sedimentation. Additionally, lack of park facilities in the immediate vicinity will result in use of the Bog for recreational purposes with attendant problems of littering. Because this is a peat Bog, there is also some chance of fire during extremely dry periods. The attractiveness of the surrounding area for development will make these problems more severe in the future.

MANAGEMENT:

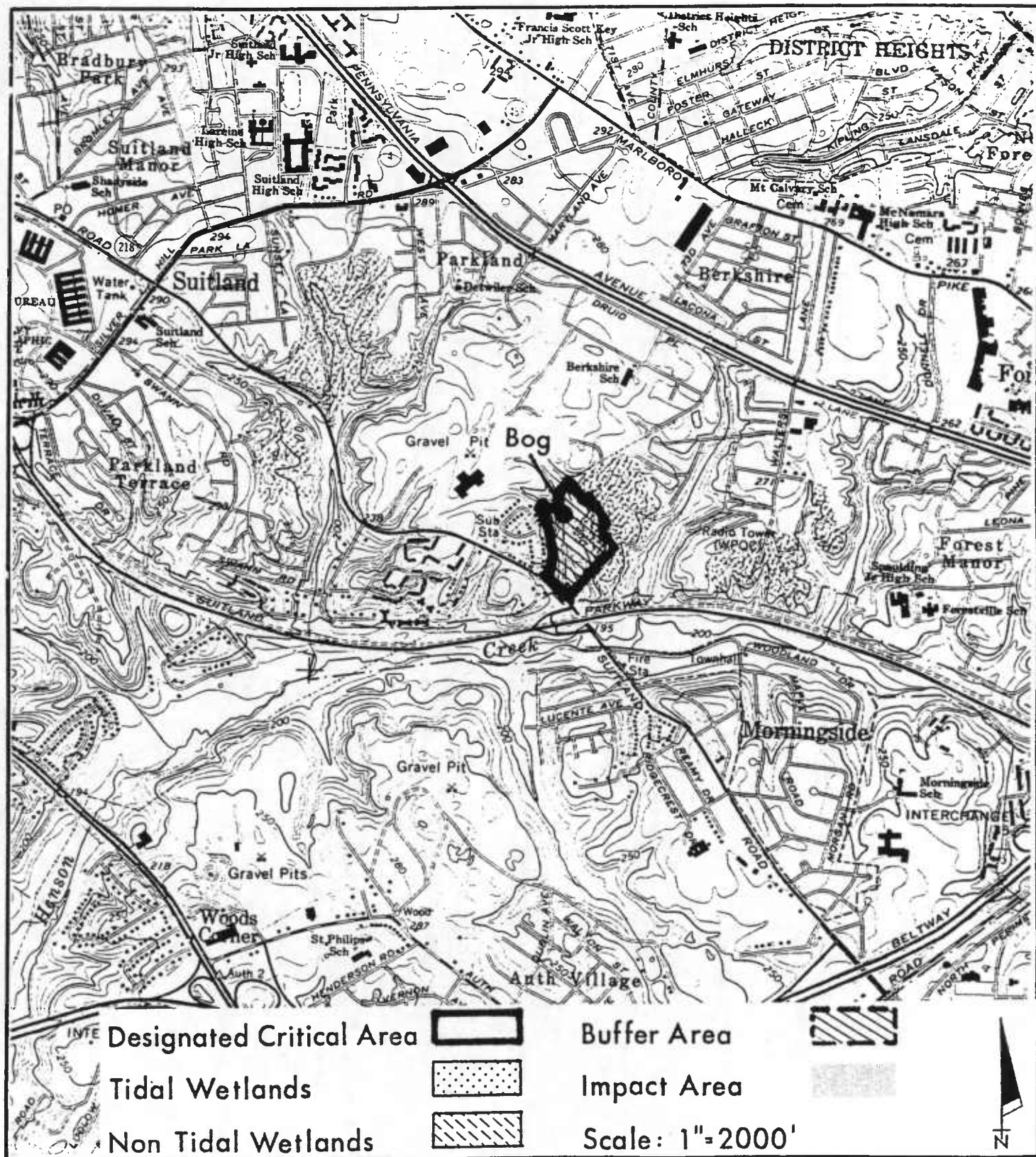
Local management efforts to date have been concentrated on addressing the sedimentation problem. County efforts in the impact area - the present and existing proposed residential subdivisions surrounding the Bog to the north and east - have involved the utilization of various regulations to control runoff, thus preventing sedimentation and allowing this water to replenish underground supplies. Such efforts will continue their importance as extensive residential construction in the area continues.

Another current management effort involves developing the Bog and surrounding land for active and passive recreational uses which are compatible with the site's environmental features. Long-term management priorities will continue to emphasize sedimentation control and protection of the Bog's groundwater supply.

AREAS OF CRITICAL STATE CONCERN

Site Name SUITLAND BOG - N19

County PRINCE GEORGES Acreage 25 Date Designated JAN.1981



Chapter Three

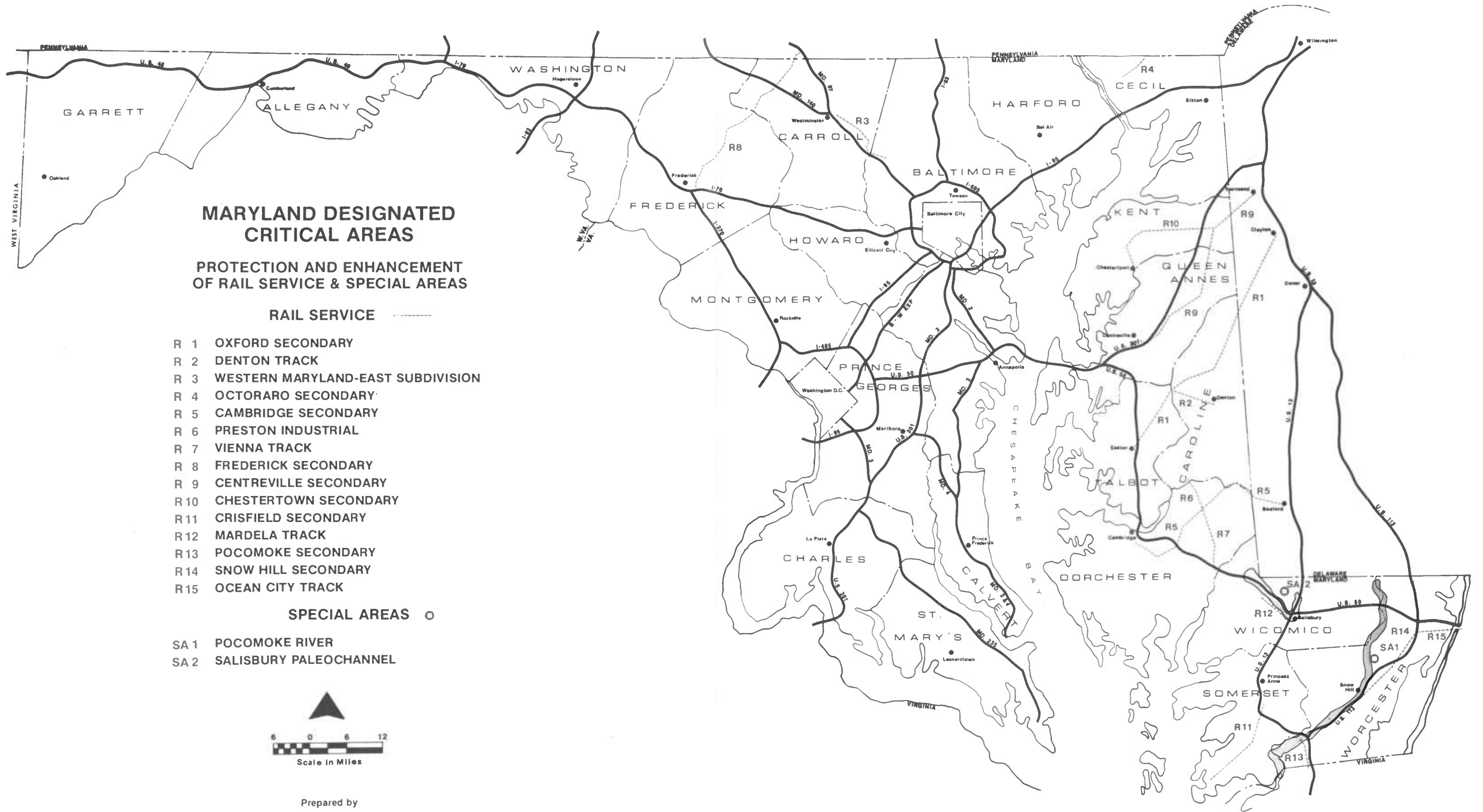
PROTECTION AND ENHANCEMENT OF RAIL SERVICES DESIGNATED AREAS

CHAPTER THREE: PROTECTION AND ENHANCEMENT OF RAIL SERVICES
DESIGNATED AREAS

I. DEFINITION

The provision of rail service can be a major element helping to sustain the overall economic health of a region. The loss of this service can have serious economic impact upon local businesses and their communities. There are currently 161 miles of branch lines in the State of Maryland which depend on a subsidy from the State's rail service continuation program to continue operation. Many more miles of track are currently abandoned or unused. These represent an important resource that could easily be lost if not protected and future use carefully planned. The map on the following page shows the location of the 15 designated rail lines. The definition of this Critical Area class to protect and enhance these rail lines is as follows:

This class contains both operating and recently abandoned or disused rail lines, including segments of those lines outside the State, that are required to connect Maryland with the rail networks of adjacent states. It also includes lines used for both commuter service and freight hauling, or inter-city passenger services.



MARYLAND DESIGNATED CRITICAL AREAS

PROTECTION AND ENHANCEMENT
OF RAIL SERVICE & SPECIAL AREAS

RAIL SERVICE

- R 1 OXFORD SECONDARY
- R 2 DENTON TRACK
- R 3 WESTERN MARYLAND-EAST SUBDIVISION
- R 4 OCTORARO SECONDARY
- R 5 CAMBRIDGE SECONDARY
- R 6 PRESTON INDUSTRIAL
- R 7 VIENNA TRACK
- R 8 FREDERICK SECONDARY
- R 9 CENTREVILLE SECONDARY
- R 10 CHESTERTOWN SECONDARY
- R 11 CRISFIELD SECONDARY
- R 12 MARDELA TRACK
- R 13 POCOMOKE SECONDARY
- R 14 SNOW HILL SECONDARY
- R 15 OCEAN CITY TRACK

SPECIAL AREAS

- SA 1 POCOMOKE RIVER
- SA 2 SALISBURY PALEOCHANNEL



Prepared by
MARYLAND DEPARTMENT OF STATE PLANNING
January, 1981

II. MANAGEMENT POLICY

The provision of rail service in Maryland, particularly in rural areas, has long been an area of concern to the State. State economic and transportation needs could be enhanced by recognition of existing rail opportunities which are currently threatened by loss or degradation of service, and future rail opportunities threatened by abandonment of rights-of-way. Recently abandoned rail lines, those threatened with abandonment or those left in poor condition by the previous owner, have been determined to be "Areas of Critical State Concern." Since the passage of the Regional Rail Reorganization Act of 1973, the State has sponsored a number of in-depth studies of both rail operations and the economic implication of abandoning marginal branch lines. A conclusion of many of the studies is that rail service can be an important element for providing economic stability in their service areas and can be a key element in future economic development potential for a region. To provide a balanced transportation system in Maryland which will best meet the future development needs of the State at the lowest cost, it will be necessary to do whatever is possible and necessary, within the limitations of competing demands on available resources, to provide essential rail transportation facilities and services.

The complex problems with which the branch lines are now confronted are a product of a series of events over the last decade. The problems began with the neglect and eventual demise of the Penn Central Railroad. As this company sank deeper into bankruptcy, maintenance of track and equipment was undertaken on an emergency only basis. Service to customers became deplorable with poor car availability, excessive transit time, and frequent damage and loss. Confidence in the carrier became so low that many of the branch line shippers either terminated or sharply curtailed their volume of rail shipments. In most instances, the shippers converted their operations to be served by trucks, in many cases, at additional cost.

As the final collapse of Penn Central approached, it became apparent that thousands of miles of the Northeast's railroad network would be

abandoned, including several branch lines in Maryland. Congress enacted the Regional Rail Reorganization Act of 1973. The Act provided for federal assistance to light density rail lines in order to reduce economic impact to communities which might otherwise lose rail service. This Act created Conrail (Consolidated Rail Corporation) to operate the bankrupt lines. The objective was to streamline the freight operation of all the bankrupt lines and consolidate their operations. This Act also created the United States Railway Administration (USRA). The USRA's mandated duty was to prepare the Final System Plan, which was to rationalize a new network out of the bankrupt lines. Under the plan, many of the Penn Central branch lines in Maryland were either to be abandoned or made eligible for subsidy to continue operation. At this point, the State, local jurisdictions and the shippers along the affected lines began to work together to preserve the rail service.

To meet the challenge of preserving the marginal lines left out of the new Conrail system by the USRA's Final System Plan, the Maryland Department of Transportation developed the State Rail Plan and formed the State Railroad Administration. The State Rail Plan initially analyzed the lines that were impacted by the Penn Central/Conrail reorganization. The lines that had enough potential to justify continued operation and those that could be abandoned without negative economic impact were identified. Many of the lines that had enough volume and/or potential to justify operation were not profitable for a number of reasons, including track deterioration and poor scheduling. These lines are now subsidized. Also identified were certain abandoned lines which were considered suitable for preservation for potential future rail use. It is both of these groups of identified lines that are the focus of this particular "Critical Areas" class.

The State Railroad Administration has put high priority in continuing freight service on existing lines where the service exerts a positive economic benefit and offers a viable alternative to less energy efficient

modes. Priorities in capital improvements for light density freight lines are for acquisition of leased lines to reduce annual operating costs and provide a long-term commitment to rail service. All lines have been rehabilitated to Class I (10 mph operations) conditions and further upgrading to Class II (25 mph operations) will be limited to selected lines where traffic warrants higher speeds. The feasibility of instituting new freight service on abandoned lines will be carefully analyzed to determine the potential viability of such service.

After September 30, 1981, the existing light density freight lines will no longer be eligible for federal freight service continuation payments. The Department of Transportation is recommending that the State continue to support operations for State FY 1982. Funds have been requested to subsidize 70% of the operating deficits with the remaining 30% funded by the shippers on each line in the form of surcharges. Local governments will continue to contribute the local share (30%) for lease and tax costs until the State completes its acquisition program. The State has already assisted Cecil County in the purchase of the Octoraro Line and is studying the feasibility of purchasing the other lines identified as having current or future rail service potential. For the lines which are currently being operated, it is believed to be cheaper for the State to buy the lines than to continue to lease them. It is also felt that purchase is the best way to preserve abandoned rail corridors for future use. Funding beyond FY 1982 will be subject to annual budgetary review and allocation restraints. Therefore, the extent of State support for acquisition, rehabilitation and operations may change as economic conditions change.

The shortage of funds is the most critical problem facing these branch lines. Although one goal of the State's program is to maintain rail service to communities where it is necessary and cost-effective for economic development, the State's financial support is intended as a short-term program to rehabilitate the lines and develop sufficient traffic to allow eventual non-subsidized operation by the private sector. For the long-term continuation of service on the subsidized lines, it

will be necessary to promote industrial, commercial and agricultural development, particularly of a rail-dependent type, along the rail corridors. Before these lines can reach self-sufficiency and become private sector activities without subsidies, State agencies and local jurisdictions with responsibilities for economic development must find ways to increase rail traffic. The future viability of subsidized rail branch lines is directly related to the growth of traffic. Without it, the State may determine the line to be too expensive to operate and discontinue service. The new traffic generated by increased shipments from existing businesses and the additional carloads realized from the location of new enterprises along a line can provide the needed support for the rail operation and lessen the financial burden on the State.

The State Railroad Administration is currently working with the Maryland Department of Economic and Community Development, the local jurisdictions, the shippers and the short line operators in attempting to establish aggressive, long-range programs of industrial, commercial and agricultural development which could increase the viability of essential rail services. This program of economic development, along with the on-going programs of rehabilitation and acquisition, has the potential to preserve and enhance rail service on the critical rail branch lines, but the highest degree of commitment and cooperation will be required of the parties involved.

To support and further the aims of the State Railroad Administration's rail preservation program, the "Critical Areas" program will use the following policies for determining the merit of and implementing various plans, programs, and projects which may impact the "Critical Areas" rail branch lines:

1. Encourage private sector solutions to rail problems.
2. Make full use of available federal, State, local and private funds to support subsidy operations as an interim measure, while initiatives are undertaken to upgrade rail lines and enhance service.

3. Seek additional funding from appropriate sources, as fiscal circumstances allow. However, State general obligation bonds should not be used to finance rail property acquisition.
4. Encourage economic development at appropriate locations along rail corridors to increase traffic and revenues.
5. Local governments and shippers, as the prime beneficiaries of rail freight continuation programs, should provide a share of the costs of the programs.
6. Give priority to the preservation of railroad rights-of-way that are abandoned or may be abandoned to prevent the loss of these resources if their importance or potential can be demonstrated.
7. Those lines which become self-supporting should be offered for sale by the State to the designated railroad operator or other solvent operator, or alternatively, the railroad operator should be required to pay a user fee to the State.

Table 2 is a summary of the most significant economic development programs which can be utilized to promote new or enhance existing industrial and commercial activities along the critical rail lines. The application of one or a combination of these programs could produce the increased traffic required to bring these rail branch lines to the point of profitability. A more detailed discussion of these programs and others can be found in Appendix B.

TABLE 2 - SUMMARY OF SELECTED ECONOMIC DEVELOPMENT ASSISTANCE PROGRAMS

PROGRAMS DESCRIPTION	Maryland Industrial Land Act	Maryland Industrial Development Financing Authority	Maryland Industrial and Commercial Redevelopment Fund	Industrial Development Revenue Bonds	Development Credit Corporation of Maryland	Rail Property Acquisition Loans of 1980 & 1981	Public Works and Economic Development (U. S. Dept. of Commerce)
Appendix Page	B-3	B-7	B-9	B-10	B-16	B-13	B-29
<u>TYPE OF ASSIS-</u> <u>TANCE</u>							
Loans	X	X	X	X	X	X	X
Grants							X
Loan Insurance		X					
Provision for Tax Exempt Financing		X		X			
<u>ELIGIBLE</u> <u>ACTIVITIES</u>							
Technical Assistance	X	X		X	X		
Working Capital					X		
Planning and Engineering Studies	X						X
Program Administration			X				
Acquisition of Industrial Property	X	X	X				

TABLE 2 - SUMMARY OF SELECTED ECONOMIC DEVELOPMENT ASSISTANCE PROGRAMS

PROGRAMS DESCRIPTION	Maryland Industrial Land Act	Maryland Industrial Development Financing Authority	Maryland Industrial and Commercial Redevelopment Fund	Industrial Development Revenue Bonds	Development Credit Corporation of Maryland	Rail Property Acquisition Loans of 1980 & 1981	Public Works and Economic Development (U.S. Dept. of Commerce)
Appendix Page	B-3	B-7	B-9	B-10	B-16	B-13	B-29
<u>ELIGIBLE ACTIVITIES</u> (Cont'd.)							
Infrastruc- ture, Roads, Streetlights, Utility lines	X						X
Acquisition of Building		X		X			
Construction of Speculative Building	X						
Plant Construction	X			X	X		
Plant Re- habilitation			X				
Purchase of Equipment		X		X	X		
Installation of Rail Spurs that are not funded by the railroad	X						X

TABLE 2 - SUMMARY OF SELECTED ECONOMIC DEVELOPMENT ASSISTANCE PROGRAMS

PROGRAMS DESCRIPTION	Maryland Industrial Land Act	Maryland Industrial Development Financing Authority	Maryland Industrial and Commercial Redevelopment Fund	Industrial Development Revenue Bonds	Development Credit Corporation of Maryland	Rail Property Acquisition Loans of 1980 & 1981	Public Works and Economic Development (U.S. Dept. of Commerce)
Appendix Page	B-3	B-7	B-9	B-10	B-16	B-13	B-29
<u>ELIGIBLE ACTIVITIES</u> (Cont'd.) Acquisition, improvement and rehabili- tation of selected rail- way facili- ties						X	

III. AREA DESCRIPTIONS AND MAPS

OXFORD SECONDARY AND DENTON TRACK

CLASS: Protection and Enhancement
of Rail Service

SITE NUMBER: R 1 and R 2

LOCATION: Oxford Secondary (R 1): From Easton, Talbot County, through Cordova and Queen Anne in Talbot County, and Ridgely, Greensboro, Goldsboro, Henderson and Marydel in Caroline County, to Clayton, Delaware.

Denton Track (R 2): From Queen Anne to Denton, Caroline County.

AREA DESCRIPTION:

These rail lines traverse an area which is primarily rural and committed to agricultural activities. The terrain is relatively flat with a scattered population on farms or in small towns. The Clayton, Delaware to Easton segment is 44.7 miles in length of which 31.6 miles are within Maryland. The Denton Branch extends 8.4 miles from Queen Anne. The lines are operated by the Maryland and Delaware Railroad under agreement with the Maryland Department of Transportation. The Maryland Department of Transportation leases the lines from the Penn Central Corporation. The Maryland and Delaware provides once a week service to all points on the lines, including approximately 11 regular rail users. The major commodities are: fertilizer, chemicals, feed, field crops, lumber, canned and frozen food, and pulpwood. Traffic on the lines for FY 1980 amounted to 677 carloads, of which 88% were inbound. Accelerated maintenance has been completed to achieve Class I (10 mph) operations. The State of Delaware is making a portion of its federal entitlement funds available for operation of the Delaware portion of this line. Talbot and Caroline Counties have executed agreements with the Maryland Department of Transportation guaranteeing payment of a portion of lease and taxes for the period through June 1981.

OWNERSHIP PATTERN: Penn Central Corporation.

CURRENT PLANS AND ZONING:

The line begins at Easton in an area of mixed zoning, predominantly industrial/commercial but with a small amount of residential. Moving north it passes through an area of agricultural zoning and a large industrial area at the intersection with Rte. 50. The agricultural zoning continues to be the predominant type of zoning adjacent to the line except within the towns of Cordova, Queen Anne, Ridgely, Goldsboro, Greensboro, and Marydel. In these incorporated communities, there is a mixture of industrial/commercial zoning and some residential.

The branch line to Denton is located in an agricultural zone except in the vicinity of Queen Anne, Hillsboro and Denton, where it is adjacent to industrial/commercial zones. The industrial/commercial zones are usually occupied by construction and agri-business companies.

CONTINUING PLANNING AND STUDIES:

The State Railroad Administration is currently negotiating the purchase of the Oxford Secondary and Denton Branch from the Penn Central Corporation.

The Administration also provides yearly updates to the Maryland State Rail Plan. This Plan contains detailed information concerning State rail operations and the policies and efforts the State is utilizing to promote rail transportation.

THREATS AND PROBLEMS:

Traffic has been declining but is expected to stabilize in FY 1981. This is due to the relocation of the line's largest shipper to the Cambridge line, and a general decline in business for other major industries located on these lines. The decline of traffic has raised doubts about the ability of these lines to become self-sufficient after 1981. The Federal share (70%) of the operating subsidy ends after FY 1981. The State Railroad Administration is planning to provide this portion of the subsidy to continue operations. If increased traffic cannot be developed in the

next few years, the lines might be viewed as too expensive to justify continued State investment.

MANAGEMENT:

1. The local jurisdictions should reevaluate their current zoning and comprehensive plans to determine if the land use adjacent to the right-of-way is consistent and compatible with future potential rail activities.
2. Further, the local jurisdictions should analyze the magnitude and location of sites of undeveloped industrial/commercial zoning to determine if too much land zoned in this category is located other than adjacent to the rail line, or if insufficient amounts are located adjacent to the rail line. Too large an amount of land planned and zoned for industrial/commercial use, other than along the rail line, will not help to enhance use of the rail line.
3. The local jurisdictions, in cooperation with State agencies, should do whatever is possible to encourage existing local businesses to use rail services.
4. The local jurisdictions and the State should do whatever is possible to encourage new businesses of a rail use type to locate along the right-of-way.

AREAS OF CRITICAL STATE CONCERN

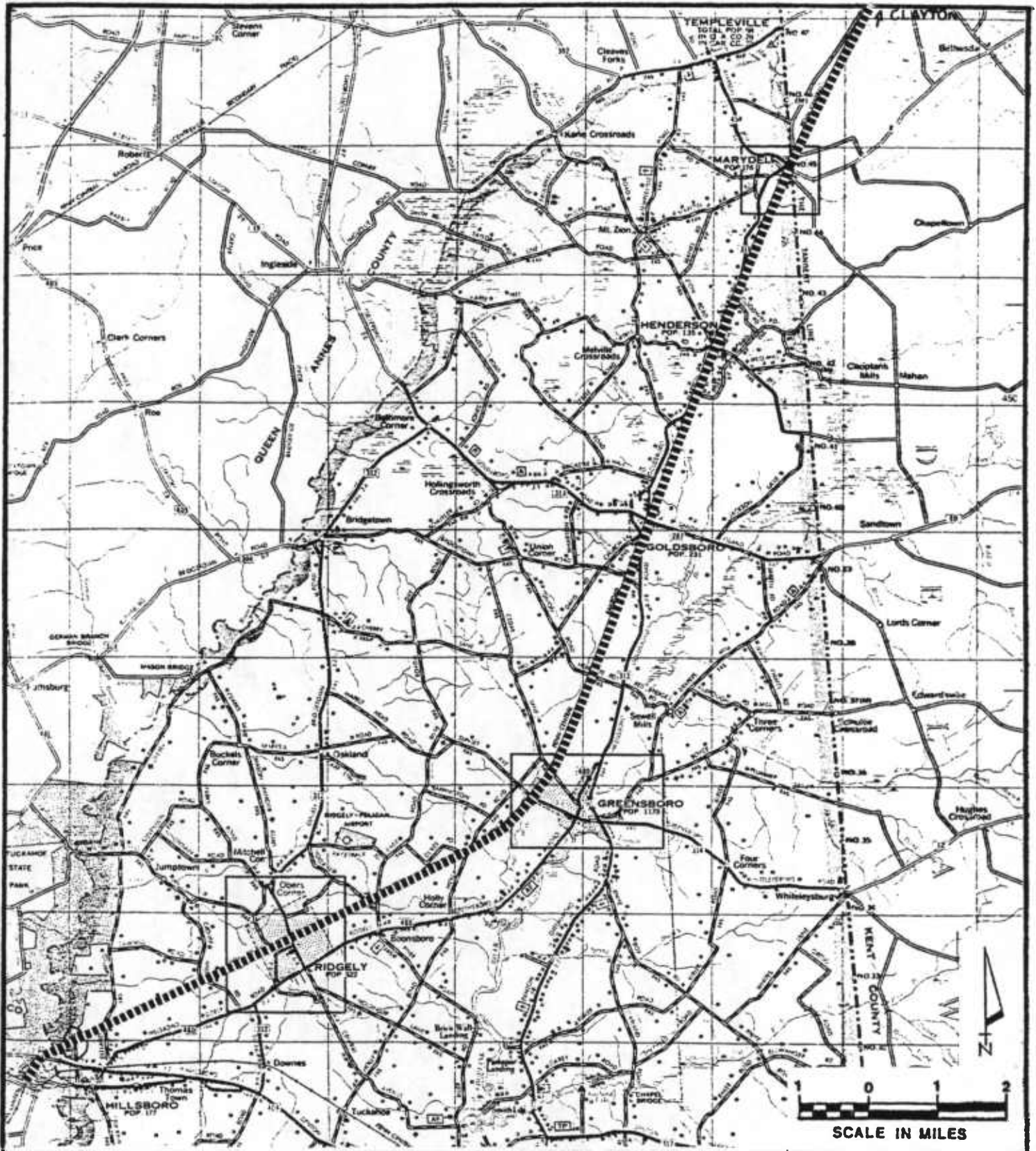
Site Name OXFORD SECONDARY (north)

R1

County CAROLINE

Acreage N/A

Date Designated JAN.1981



AREAS OF CRITICAL STATE CONCERN

Site Name OXFORD SECONDARY (south)

R1

County CAROLINE

Acreage N/A

Date Designated JAN.1981

MATCH A

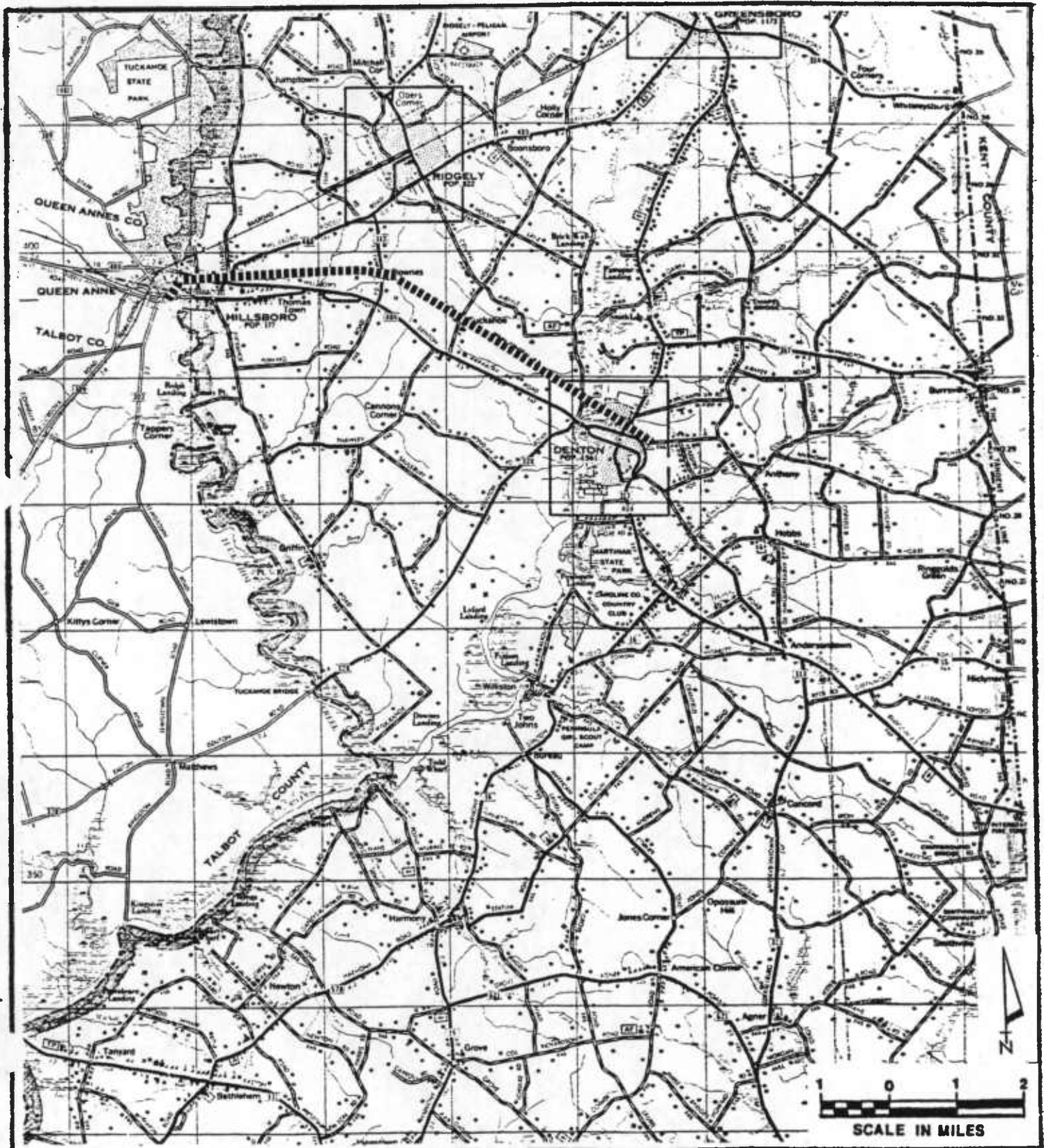


AREAS OF CRITICAL STATE CONCERN

Site Name DENTON TRACK

R2

County CAROLINE Acreage N/A Date Designated JAN. 1981



WESTERN MARYLAND-EAST SUBDIVISION

CLASS: Protection and Enhancement of Rail Service SITE NUMBER: R 3

LOCATION: From Westminster, Carroll County to Emory Grove,
Baltimore County

AREA DESCRIPTION:

This railroad line, once the mainline of the Western Maryland Railway, and now owned by Chessie System, traverses a rural to suburbanizing area in the rolling hills of the Central Maryland Piedmont. The line generally follows the West Branch of the Patapsco River along most of its right-of-way, and is subject to occasional severe flooding. Major portions of the line are currently washed out as a result of Hurricane Eloise in 1974. The length of the line between Westminster and Emory Grove is 13.3 miles long. The segment without service due to the washouts, Westminster to Cedarhurst, is 8.6 miles long. Before the storm damage, the railroad provided regular, heavy through mainline service, as well as local service, involving all types of commodities. Carroll County is in favor of reopening the through service to promote its development.

OWNERSHIP PATTERN: Chessie System.

CURRENT PLANS AND ZONING:

Existing service on this line extends through the City of Westminster as far as Hahn Road. Beginning at Hahn Road, the line is out of service and is located in a general industrial district. After crossing Cranberry Road, the line is primarily in an extensive conservation zone following the flood plain at the West Branch of the Patapsco. Beyond the immediate corridor of conservation zoning is a large transitional zone forming the growth area

around the City of Westminster. Shortly after crossing Gorsuch Road, the line and conservation corridor leave the growth area and cross an extensive agricultural district. Just north of the Village of Patapsco, the line enters the Finksburg growth area characterized by the transitional zone, although a conservation zone continues in a corridor along the floodplain and includes much of the right-of-way. The Finksburg area is currently the subject of a Master Plan revision and comprehensive rezoning. As presently proposed, a majority of the transitional zoning in the vicinity of the right-of-way will be rezoned conservation. The rail line finally passes through a general industrial zone in the vicinity of Md. 91 and then back into a conservation zone near the Baltimore County boundary. Upon entering Baltimore County, the line is in a large watershed protection zone from which it passes into a large agriculture preservation zone. As the railroad approaches the Emory Grove area, it passes additional agricultural zoning and small areas of commercial and residential zoning.

CONTINUING PLANNING AND STUDIES:

The State Rail Administration undertakes a yearly update of the Maryland State Rail Plan which contains detailed information concerning State rail operations and the policies and efforts the State is utilizing to promote rail transportation.

THREATS AND PROBLEMS:

The abandonment by Chessie seems inevitable, thus threatening loss of a potential vital transportation link for both freight and commuters between the Westminster area and the Baltimore City area. If the line is abandoned, the right-of-way could revert to the adjacent property owners making reuse of the line for rail operations difficult. The right-of-way would require either public acquisition or some other acceptable preservation technique at the time of abandonment to preserve the corridor for future use.

The main problem confronting reuse of this line is its location in the floodplain of the West Branch of the Patapsco River and the potential for future flood damage. Increases in stormwater runoff in the watershed caused by development in this suburbanizing area needs to be mitigated.

MANAGEMENT:

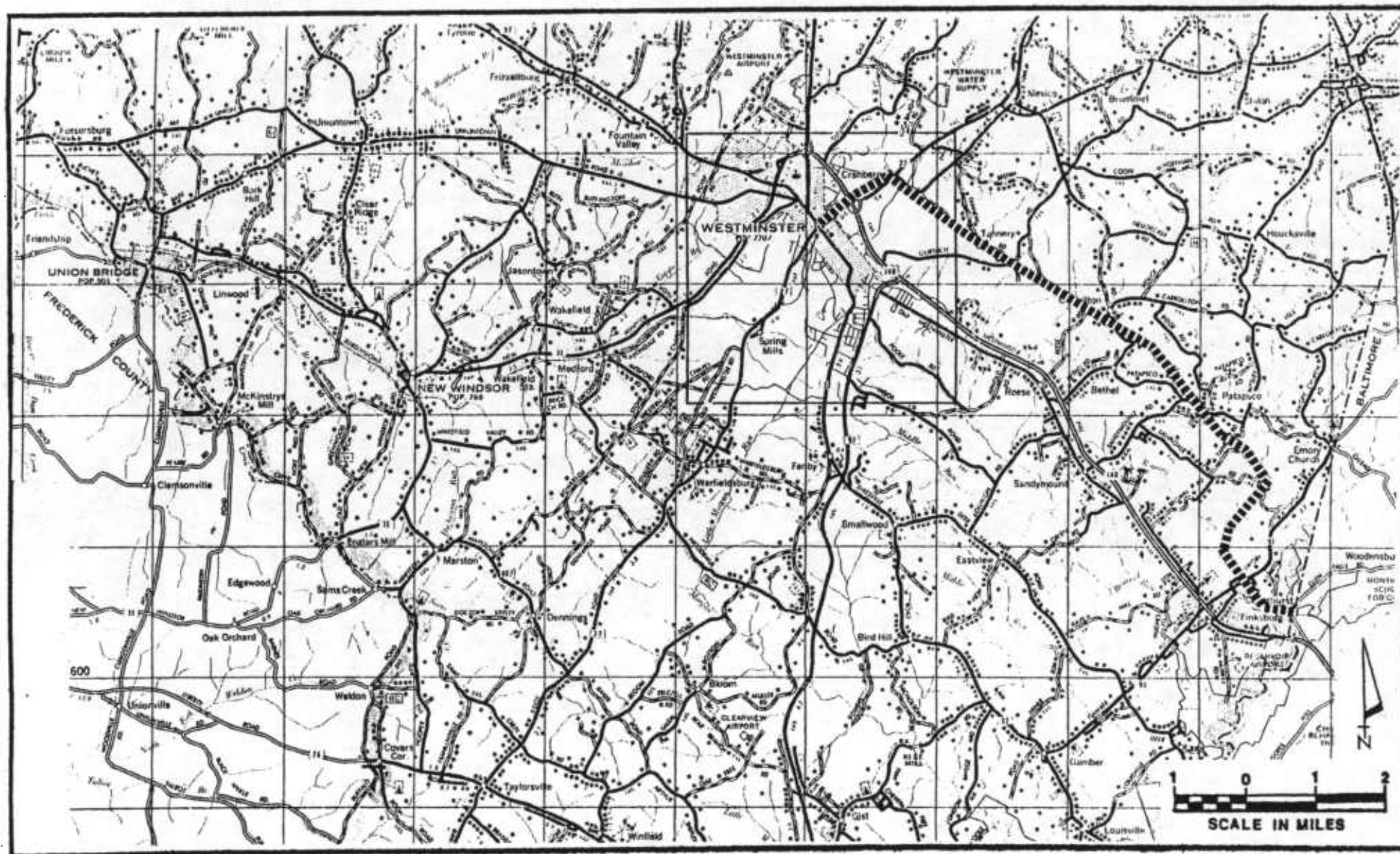
1. Stricter enforcement of stormwater management measures to reduce the threat of future washouts if line is restored.
2. The local jurisdictions, in cooperation with the State, must study the need and feasibility of preserving the right-of-way by acquisition or some other means for future rail operations.
3. The local jurisdictions should analyze any proposed zoning changes to determine any potential negative impacts upon future rail use of the right-of-way.

AREAS OF CRITICAL STATE CONCERN

Site Name WESTERN MARYLAND - EAST SUBDIVISION (west) R3

County CARROLL Acreage N/A Date Designated JAN. 1981

3-21

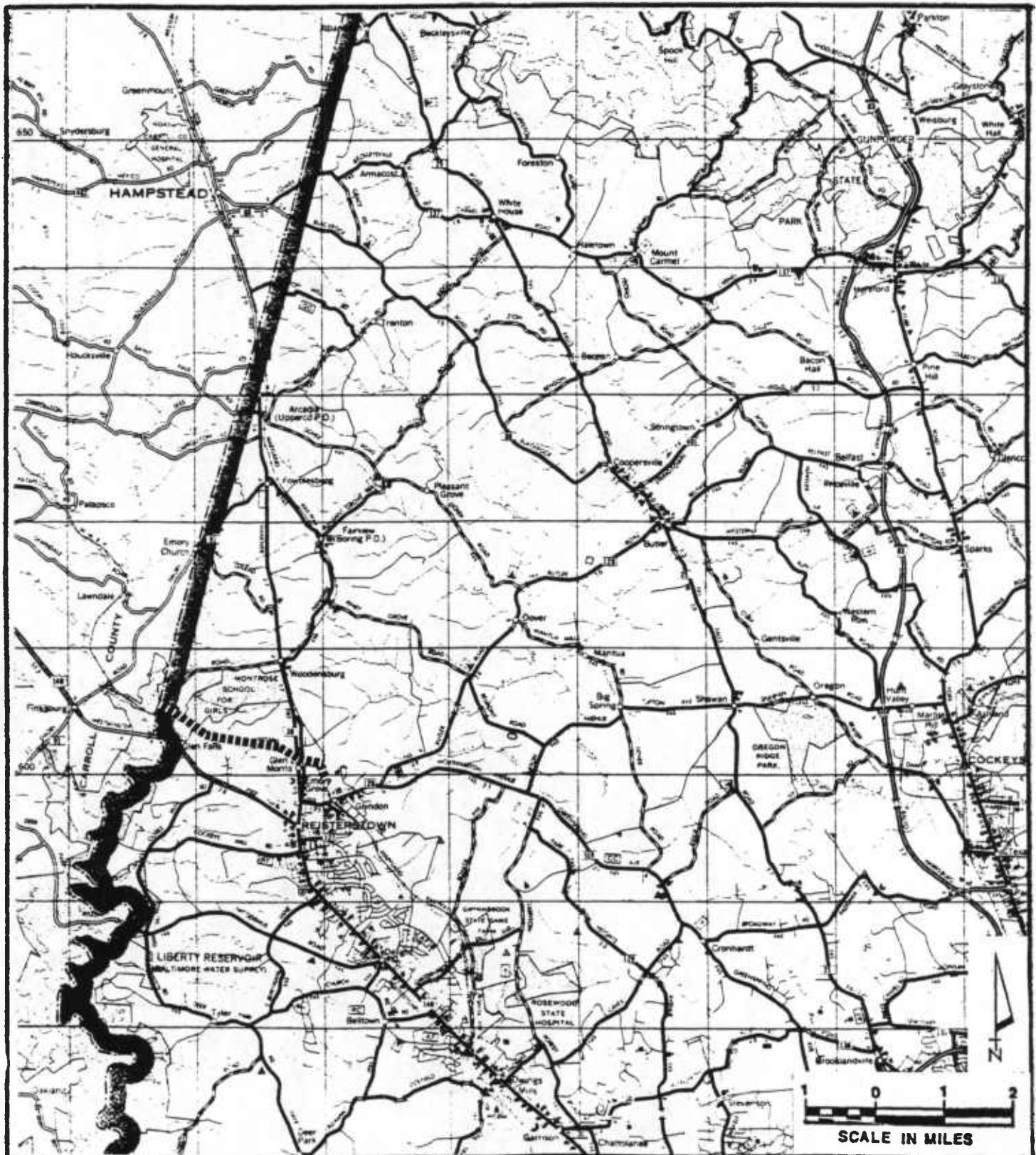


AREAS OF CRITICAL STATE CONCERN

Site Name WESTERN MARYLAND - EAST SUBDIVISION (east) R3

County BALTIMORE Acreage N/A Date Designated JAN.1981

MATCH A



OCTORARO SECONDARY

CLASS: Protection and Enhancement
of Rail Service

SITE NUMBER: R 4

LOCATION: From Colora through Rising Sun in Cecil County to the
Pennsylvania State Line

AREA DESCRIPTION:

The Octoraro line is located in an area of northern Cecil County which is characterized by rolling hilly topography and scattered small communities. The landscape is dominated by agricultural activities and woodlands. This line is 5.7 miles long in Maryland and has been out of service for some time. It was washed out on its Pennsylvania end in September 1971 and again by Hurricane Agnes in June of 1972. Penn Central, the original owner, applied for authority to totally abandon the line in Pennsylvania and Maryland. Local shippers and community officials opposed and prevented the move to abandon, but were unable to get the Penn Central to reopen the line. The railroad's national problems were bringing it closer to bankruptcy and made the possibility of restored freight service remote. With the end of Penn Central, the United States Railroad Administration's Revised Final System Plan conveyed the whole line, including the portion of the line in Maryland to Conrail with subsequent acquisition by the Southeast Pennsylvania Transportation Authority (SEPTA) utilizing an Urban Mass Transit Administration loan. The State has given a grant to Cecil County for 90% of the cost to buy the Maryland portion from SEPTA.

The Octoraro Railway was formed and started operating the line in Pennsylvania in July 1979. It has authorization from the Interstate Commerce Commission to operate to Colora, but the track is in need of rehabilitation. No Maryland shippers are presently served but at least

four industries in Colora and Rising Sun have been identified by the railroad as shippers who would use rail service if available. This branch provides the only rail access to the former Bainbridge Naval Training Station. Although declared surplus by the federal government, the site has future industrial development potential. The Department of Natural Resources' Power Plant Siting Program has also identified the property for acquisition as a future power plant site. They are negotiating a purchase price with the federal government.

OWNERSHIP PATTERN: Cecil County.

CURRENT PLANS AND ZONING:

This line passes through an area which is zoned predominantly agricultural. Adjacent to the track in the communities of Colora and Rising Sun, and near Rt. 1 at the Pennsylvania line are areas of industrial-commercial zoning.

CONTINUING PLANNING AND STUDIES:

Cecil County has acquired this branch under a grant from the Department of Transportation and is developing plans for future services.

The State Rail Administration annually updates the Maryland State Rail Plan, which contains detailed information concerning State rail operations and the policies and efforts the State is utilizing to promote rail transportation.

THREATS AND PROBLEMS:

The lack of service on this line since 1971 represents a major obstacle to developing new rail use customers at a level sufficient to offset the cost of operation.

The condition of the track must be greatly improved before the Octoraro Railway can operate over it.

Preservation of the right-of-way is no longer a problem with the purchase of the line by Cecil County.

MANAGEMENT:

1. Develop traffic potential, particularly the Bainbridge property.
2. Rehabilitate the tracks to Class I standards.
3. Contract with Octoraro Railway to operate.
4. The local jurisdictions should reevaluate their current zoning and comprehensive plans to determine if the land use adjacent to the right-of-way is consistent and compatible with future potential rail activities.

AREAS OF CRITICAL STATE CONCERN

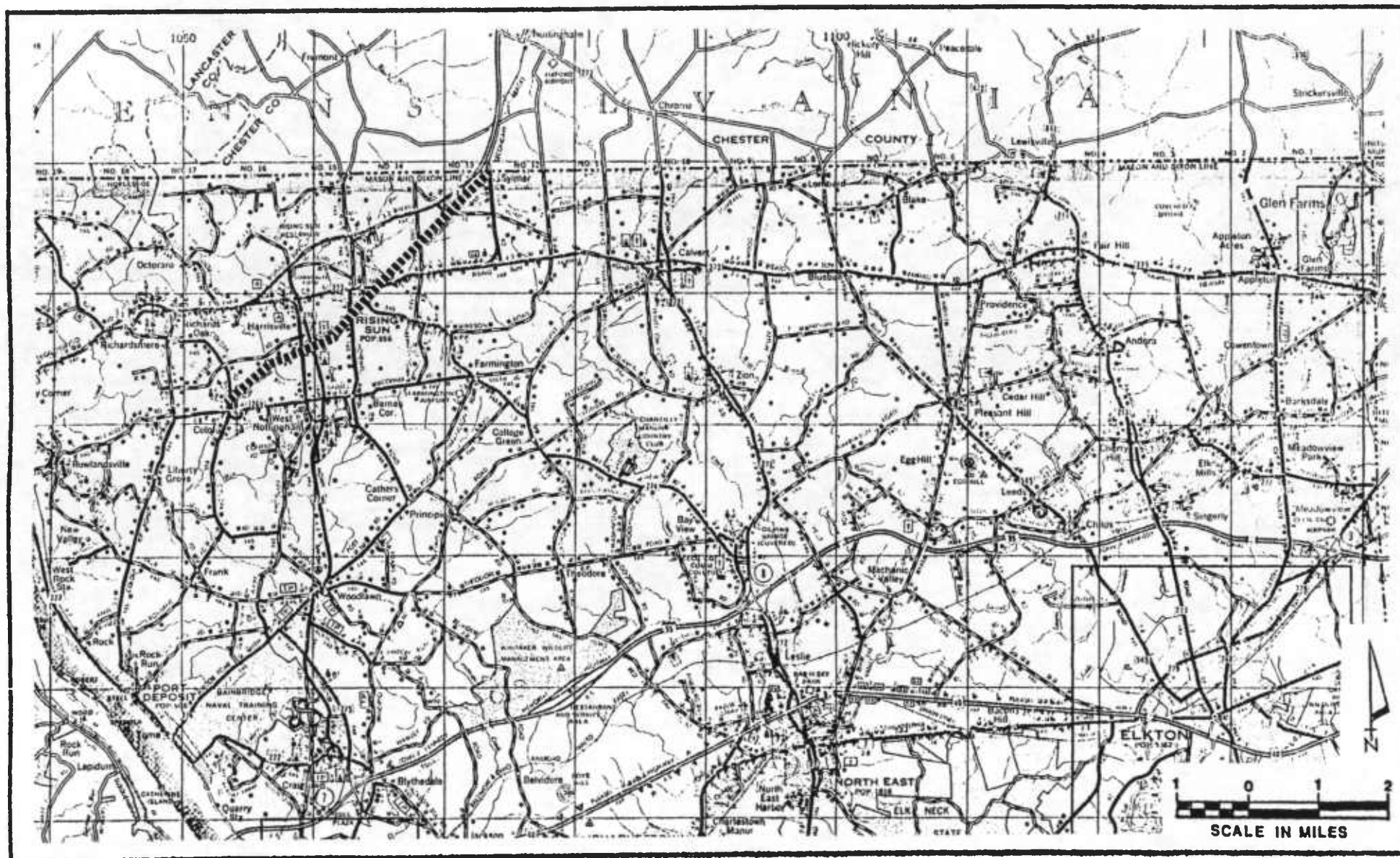
Site Name OCTORARO SECONDARY

R4

County CECIL

Acreage N/A

Date Designated JAN. 1981



CAMBRIDGE SECONDARY AND PRESTON INDUSTRIAL

CLASS: Protection and Enhancement of
Rail Services

SITE NUMBER: R 5 and R 6

LOCATION:

Cambridge Secondary (R 5): From Cambridge, Dorchester County through Hurlock in Dorchester County, and Federalsburg in Caroline County, to Seaford, Delaware.

Preston Industrial (R 6): From Hurlock in Dorchester County, to Preston in Caroline County.

AREA DESCRIPTIONS:

These lines traverse a generally rural area where agricultural activities dominate. The terrain is low and flat. The lines are relatively level and straight and connect several small towns with the City of Cambridge, the major urban center in the area. The line from Cambridge to Seaford is 30.4 miles in length with 27.2 miles in Maryland. The Preston Track extends 6.1 miles north from Hurlock. The Maryland and Delaware Railroad operates the lines jointly under an agreement with the Maryland Department of Transportation which leases them from the Pen Central Corporation. Service is provided from Seaford four times a week to Cambridge and one time a week to Preston. There are approximately 21 regular rail users along the lines. In FY 1980, the lines generated 1,687 carloads of which 78 percent were inbound. The major commodities moved on these lines are fertilizer, chemical products, feed, canned or frozen foods, lumber, field crops and paper. The entire line has been upgraded to FRA Class I (10 mph) Standards. Additional contracts to rehabilitate the track from Seaford to Hurlock to Class II (25 mph) are anticipated if coal traffic to the Vienna Power Plant uses rail rather than barge. The branch line between Hurlock and the Vienna plant is owned by the Delmarva Power and Light Company and connects with

the Cambridge Secondary at Hurlock. They will restore their track to the extent necessary to accommodate equipment and coal deliveries.

Growth is possible with some plant expansions proposed. A large facility for handling feed ingredients, a major rail shipper, located on the line in FY 1980.

The State of Delaware is making a portion of its federal entitlement funds available for operation of the Delaware portion of this line. Dorchester and Caroline Counties have executed agreements with the Maryland Department of Transportation to guarantee payment of a portion of lease and taxes through June 1981.

OWNERSHIP PATTERN: Penn Central Corporation.

CURRENT PLANS AND ZONING:

The land along these lines excluding the areas within and immediately adjacent to the incorporated towns of Federalsburg, East New Market, Hurlock, Preston and Cambridge is zoned Agricultural/Residential (A-R) to promote agricultural activities. The areas along the lines within and adjacent to the incorporated communities and unincorporated settlement of Linkwood contain a wide variety of residential, commercial, and industrial zoning categories.

CONTINUING PLANNING AND STUDIES:

The State Railroad Administration is currently negotiating the purchase of the Branch from the Penn Central Corporation.

The Administration also does yearly updates of the Maryland State Rail Plan which contains detailed information concerning State rail operations and the policies and efforts the State is utilizing to promote rail transportation.

THREATS AND PROBLEMS:

The operation of the Cambridge and Preston lines in FY 1980 produced a \$118,000 deficit which was covered by the subsidy program. With the Federal

share (70%) of this subsidy ending after FY 1981, the State Railroad Administration is planning to provide additional financial assistance in order to keep the line operating. Considering the limitations placed upon the State by competing demands on available funding resources, this line might face abandonment if additional traffic is not generated. In the next few years, the growth in traffic will have to reach a level where the line can at least pay its own operating costs or the State may determine the line to be too expensive to justify continued State investment.

MANAGEMENT:

1. The local jurisdictions should reevaluate their current zoning and comprehensive plans to determine if the land use adjacent to the right-of-way is consistent and compatible with future potential rail activities.
2. Further, the local jurisdictions should analyze the magnitude and location of sites of undeveloped industrial/commercial zoning to determine if too much land zoned in this category is located other than adjacent to the rail line, or if insufficient amounts are located adjacent to the rail line. Too large an amount of land planned and zoned for industrial/commercial use, other than along the rail line, will not help to enhance use of the rail line.
3. The local jurisdictions, in cooperation with State agencies, should do whatever is possible to encourage existing local business to use rail services.
4. The local jurisdictions and the State should do whatever is possible to encourage new industries and businesses to locate along the right-of-way.

AREAS OF CRITICAL STATE CONCERN

Site Name CAMBRIDGE SECONDARY (west)

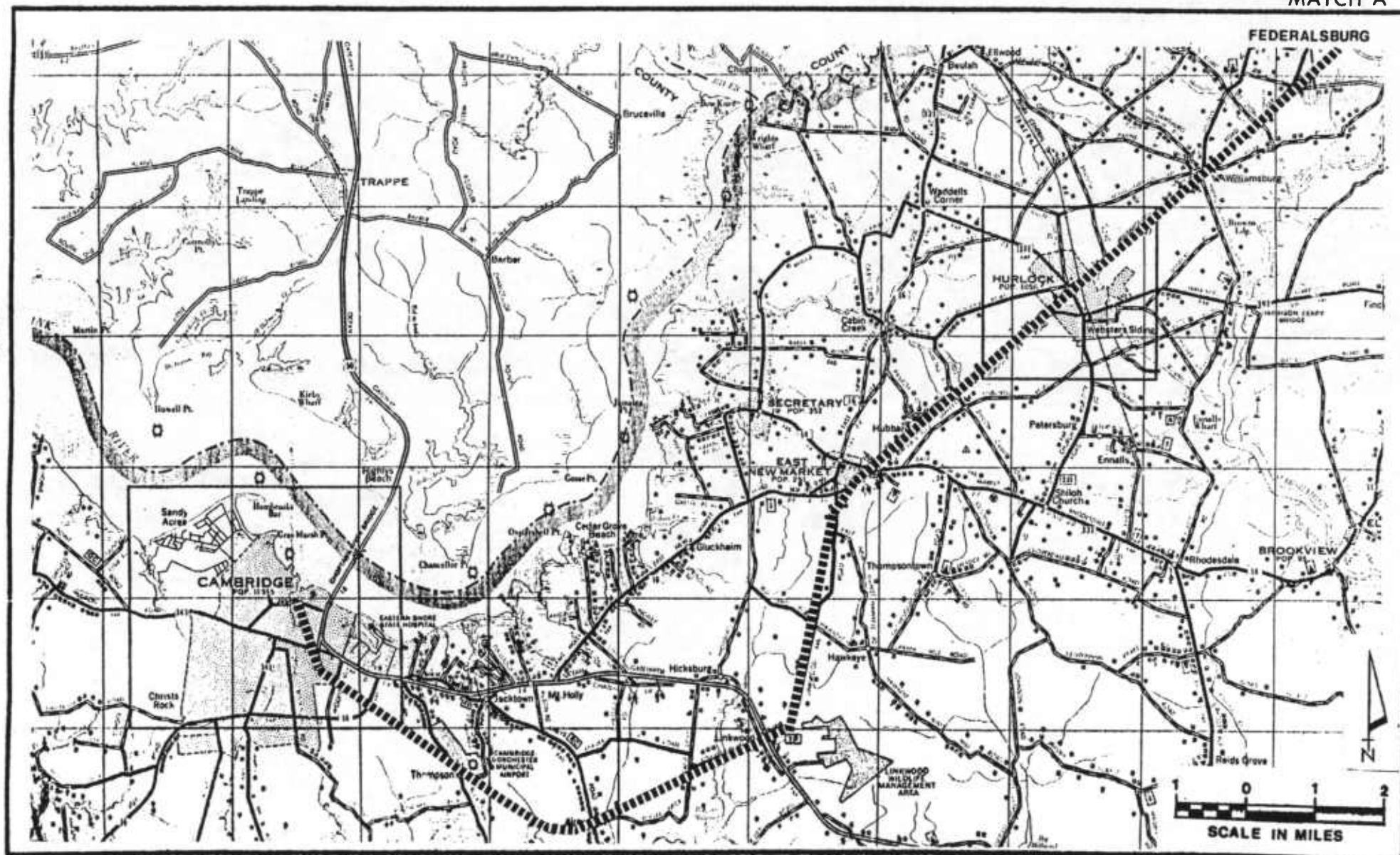
R5

County DORCHESTER

Acreage N/A

Date Designated JAN.1981

MATCH A



AREAS OF CRITICAL STATE CONCERN

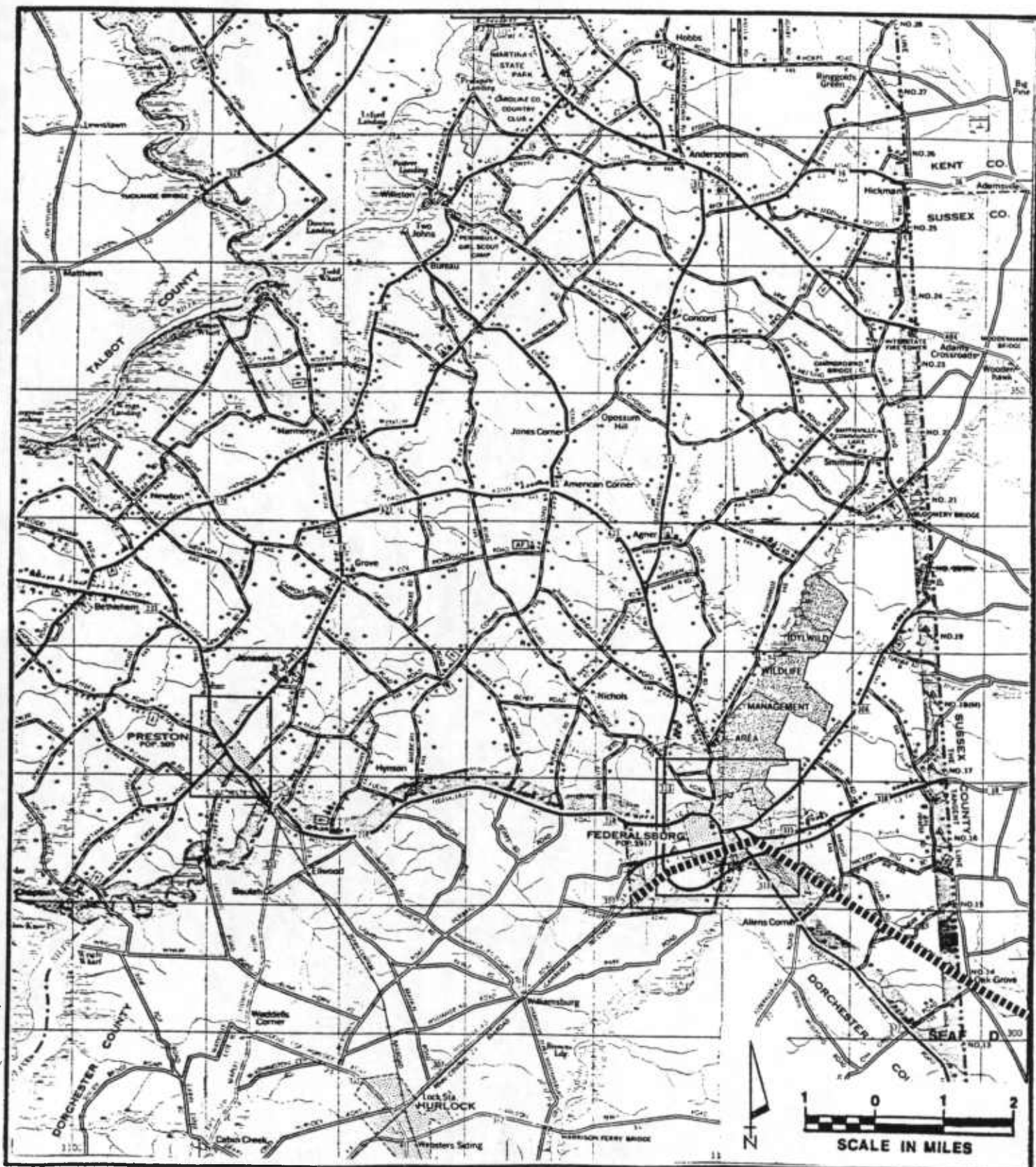
Site Name CAMBRIDGE SECONDARY (east)

R5

County CAROLINE

Acreage N/A

Date Designated JAN. 1981



MATCH A

3-31

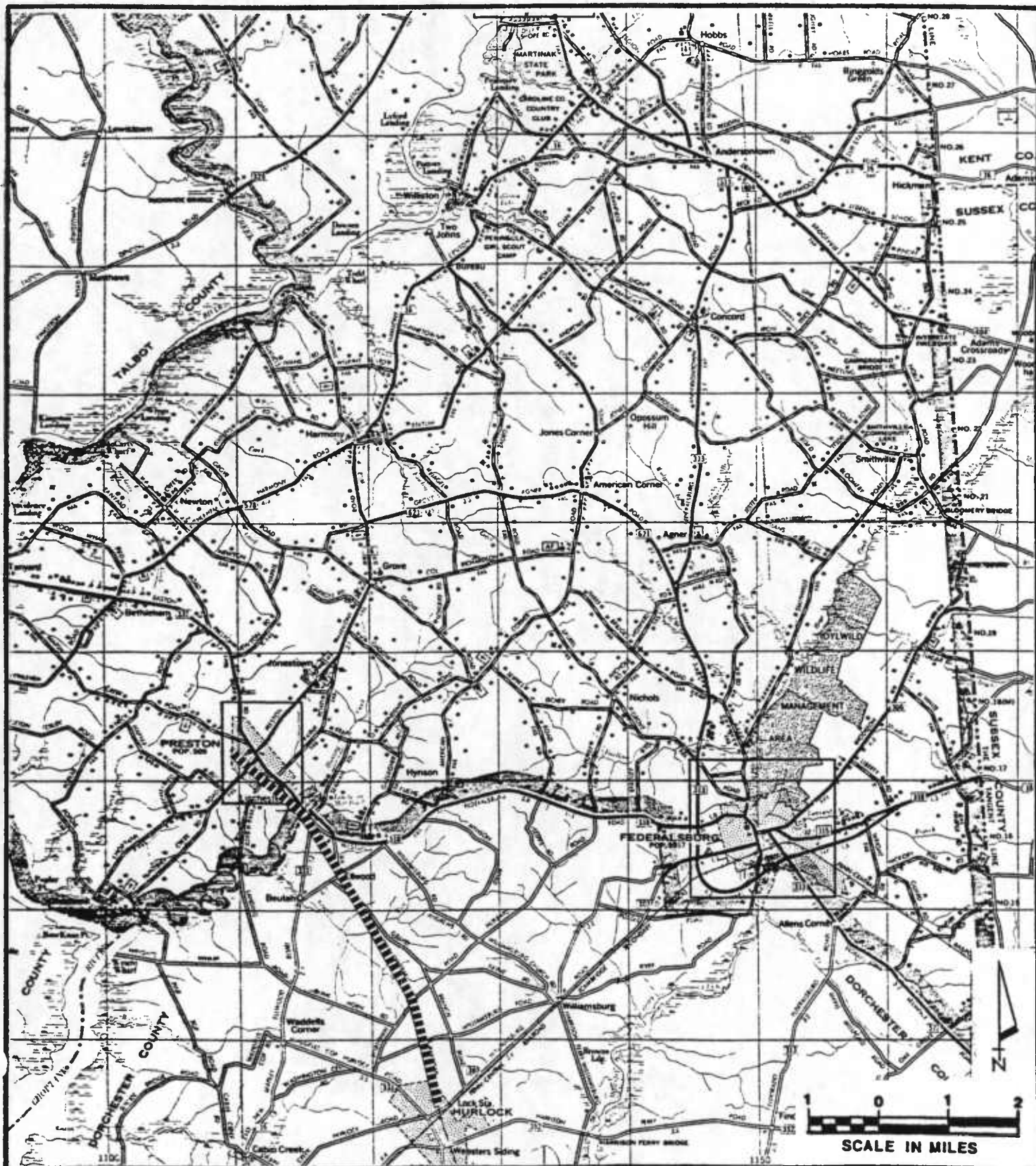
Sheet 2 of 2

AREAS OF CRITICAL STATE CONCERN

Site Name PRESTON INDUSTRIAL

R6

County DORCHESTER-CAROLINE Acreage N/A Date Designated JAN.1981



VIENNA TRACK

CLASS: Protection and Enhancement
of Rail Service

SITE NUMBER: R 7

LOCATION: From Hurlock to Vienna, Dorchester County.

AREA DESCRIPTION:

This line traverses a region with flat terrain and dominated by agricultural land and activities. There are only a few small scattered communities, with the towns of Hurlock and Vienna the only significant urban areas. No rail service has been provided on this 10.2 mile branch for several years. There were only seven carloads generated in 1973 with service being provided approximately once a month. Delmarva Power and Light acquired the right-of-way after it was abandoned because of the lack of traffic. The power company might use the line to bring equipment and extensive shipments of coal to a proposed 500 Megawatt generating facility at Vienna.

OWNERSHIP PATTERN: Delmarva Power and Light.

CURRENT PLANS AND ZONING:

The land adjacent to this line is predominantly zoned Agricultural/Residential (A-R) to promote agricultural activities. The incorporated towns of Vienna and Hurlock have a mixture of residential, commercial and industrial zoning along the track.

CONTINUING PLANNING AND STUDIES:

The State Rail Administration annually updates the Maryland State Rail Plan, which contains detailed information concerning State rail operations

and the policies and efforts the State is utilizing to promote rail transportation.

THREATS AND PROBLEMS:

There seems to be no immediate threat to the continued existence of the right-of-way while owned by Delmarva Power and Light and proposed for eventual use by this company. However, there is a potential for negative impact upon the future reuse of the line by the possible placement of inappropriate development adjacent to the line.

MANAGEMENT:

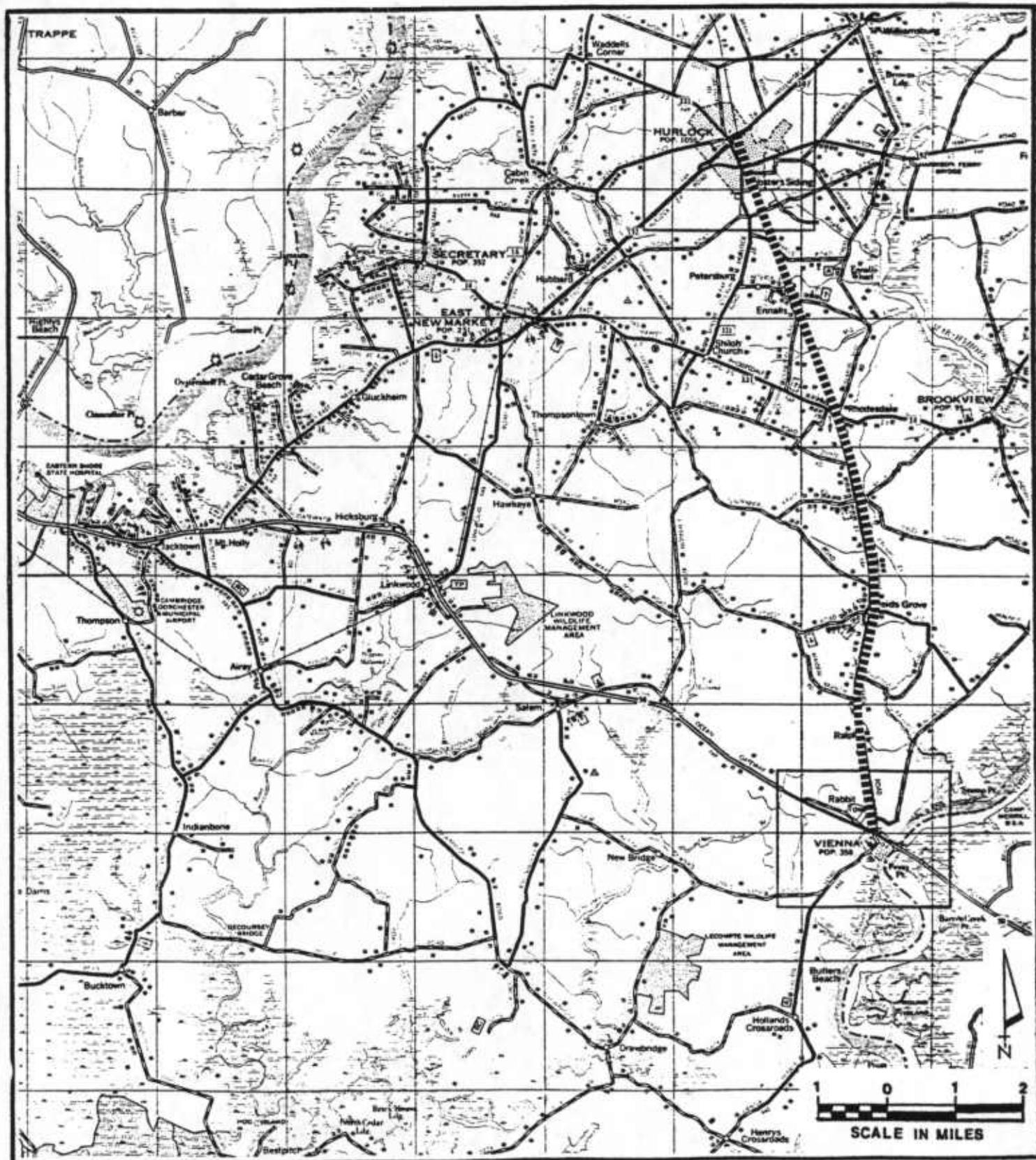
1. The local jurisdictions must carefully study every land use and zoning change to determine any potential negative impacts they might have upon the future reuse of the right-of-way for rail activities. Any negative impacts of a proposed development or zoning change will require mitigation or the proposal should be disapproved as not being in the best interest of the jurisdiction.
2. The State and local jurisdictions should support Delmarva Power and Light's proposal to burn coal at their power plant.
3. The State and local jurisdictions should work with Delmarva Power and Light to encourage the shipment of coal to their power plant by railroad rather than barge.

AREAS OF CRITICAL STATE CONCERN

Site Name VIENNA TRACK

R7

County DORCHESTER Acreage N/A Date Designated JAN.1981



FREDERICK SECONDARY

CLASS: Protection and Enhancement
of Rail Service

SITE NUMBER: R 8

LOCATION: From Frederick City, through Walkersville and Woodsboro in Frederick County, and Keymar and Taneytown in Carroll County to Littlestown, Pennsylvania

AREA DESCRIPTION:

The Frederick Secondary Track extends north from Frederick City and a connection with the Chessie System, through scattered rural communities to an interchange with the Maryland and Pennsylvania Railroad in Littlestown, Pennsylvania. The line generally follows Maryland Route 194 in a small limestone valley dominated by agricultural land. The total length of the line from Frederick City to Littlestown is 30 miles of which 27.9 miles are in Maryland.

The entire length of the line is not currently operated. Only two small unconnected segments are under subsidy from the State - a 1.5 mile segment on the south end in Frederick City and a 16.3 mile segment in the middle of the line.

Chessie Operation - The portion of the Frederick Secondary Track from the B&O interchange to 6th Street in Frederick is served by Chessie. This is only 1.5 miles of the 3.8 miles that lie south of the washed out Monocacy River Bridge. Chessie has operated this segment under an Interstate Commerce Commission service directive since 1972 when the bridge over the Monocacy River was washed out, precluding direct service by the Penn Central Railroad. Chessie has continued to serve this segment

under a letter of understanding with the State since July 1976 when the Interstate Commerce Commission directive expired. The Maryland Department of Transportation leases the line from Penn Central Corporation and pays taxes on the property. The line has showed steady traffic with a potential for expansion of some industries. The impact of abandoning this line could be quite severe for some local businesses. One major shipper, the Clorox Company, has indicated that the abandonment of rail service would severely impact its operation in Frederick. In FY 1979, the line generated 103 carloads. The major commodities hauled included chemicals, scrap, manufactured products and forest products. Chessie services the line three times per week.

Maryland Midland Operation - The line from the washed out Monocacy River Bridge to the Pennsylvania border was originally operated under subsidy by the Maryland and Pennsylvania Railroad from April 1, 1976 to March 30, 1978, when service was terminated due to excessive operating deficits. The Maryland Department of Transportation has since funded accelerated maintenance on this line between Walkersville and Taneytown only, and constructed a connection to the Western Maryland Railway at Keymar. An operating agreement with the Maryland Midland Railway reinstituted service in May 1980.

The Maryland Midland operates this 16.3 mile segment of the Frederick Secondary north of the Monocacy River Bridge (total approximately 26 miles) with two trips per week. Only five carloads were moved in the last months of FY 1980 due to newness of the operation. There were 153 carloads generated in FY 1978, the last year of the Maryland and Pennsylvania Railroad operation. Major commodities hauled include feed and grain mill products, lumber and millwork, fertilizer, chemicals, and field crops.

Several shippers have projected modest growth potential with adequate service levels. Carroll County is actively promoting economic development in Taneytown along the rail line. Frederick and Carroll Counties have executed agreements with the Department of Transportation to guarantee

a portion of lease and taxes through June 1981. They have further agreed to pay up to \$22 per carload in operating losses.

OWNERSHIP PATTERN: Penn Central Corporation.

CURRENT PLANS AND ZONING:

The Frederick Secondary Track begins and passes through the heavily developed eastern portions of the City of Frederick. The zoning in the area is a mixture of industrial, commercial and residential. As the line leaves the City and continues north, it passes an area of mixed residential, industrial and commercial zones before turning east through additional agricultural land and entering Walkersville. In Walkersville, there is the normal urban mix of industrial, commercial and residential zones. After turning north and leaving Walkersville, the line passes through a large area of agricultural zoning and then enters a mixture of industrial, commercial and residential zones in the town of Woodsboro. Immediately north of the town, the line passes through a large mining zone. Turning east again at Le Gore, more agricultural land is encountered before entering a mixture of agricultural and industrial zones in the New Midway-Ladiesburg area.

Northeast of Ladiesburg, the line passes through a large area of agricultural land and crosses the Little Pipe Creek into Carroll County. In Carroll County, the line passes to the east of the Village of Keymar and a small general business zone. From Keymar to Taneytown, the line is in a large agricultural zone. In Taneytown, as well as in the immediate surrounding area, the rail line passes through various zoning districts. On the west side of the City, the line passes through a small transitional zone and a substantial restricted industrial zone. On the east side of town, the line continues through a small general industrial zone and another small transitional zone. Within the corporate limits, the line is bordered mainly by a restricted industrial zone and a small residential zone. From Taneytown to the Pennsylvania State line, the railroad is in a large agricultural zone. The area covered by transitional zoning within Carroll County is scheduled to be the subject of a Master Plan revision and comprehensive rezoning and

will eventually be replaced by other zoning classifications. The City of Taneytown is also planning to do a Master Plan revision.

CONTINUING PLANNING AND STUDIES:

The State Railroad Administration is currently negotiating the purchase of the branch from the Penn Central Corporation.

The Administration also annually updates the Maryland State Rail Plan, which contains detailed information concerning State rail operations and the policies and efforts the State is utilizing to promote rail transportation.

Another study is underway to determine the cost-effectiveness of restoring the Monocacy River Bridge which may provide additional traffic, for the north end of the line, from potential and existing rail users.

THREATS AND PROBLEMS:

The continued operation of the southern portion of this line is not threatened at this time. Chessie is realizing a small profit on the operation and has indicated a desire to acquire the segment if the track is rehabilitated.

The situation is quite different on the remaining portion of the line. The current Maryland Midland operation is too new to make any growth predictions making the future outlook very uncertain. With the Federal share (70%) of the subsidy program ending after FY 1981, the State Railroad Administration is planning to provide additional financial assistance in order to keep the line operating. Considering the limitations placed upon the State by competing demands on available funding resources, this line might face abandonment if additional traffic is not generated. In the next few years, the growth in traffic will have to reach a level where the line can at least pay its own operating costs or the State may determine the line to be too expensive to justify continued State investment.

There is an additional problem with the northern portion of the Frederick Secondary. The Maryland Midland operates only two-thirds of the line north of the Monocacy Bridge. The two short portions of track at either end of its operation will need to be preserved to allow for future expansion of service. Expanded service might include connecting with the Maryland and Pennsylvania at Littlestown, and with Frederick City, if the Monocacy Bridge is determined to be economically feasible to restore. Restoring the through route from Frederick to Littlestown or just to Frederick would produce additional traffic for the Maryland Midland.

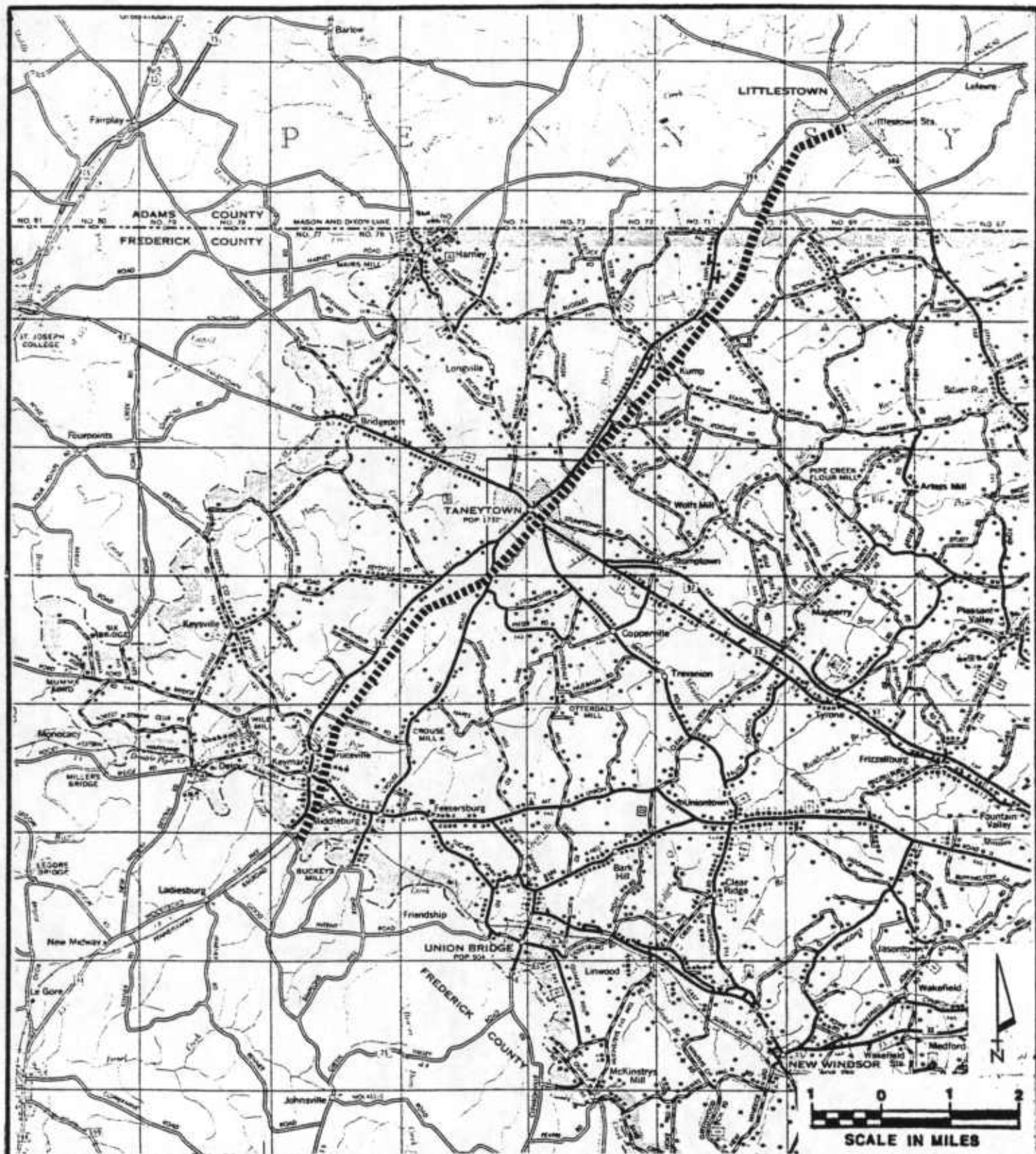
MANAGEMENT:

1. The local jurisdictions should reevaluate their current zoning and comprehensive plans to determine if the land use adjacent to the right-of-way is consistent and compatible with future potential rail activities.
2. Further, the local jurisdictions should analyze the magnitude and location of sites of undeveloped industrial/commercial zoning to determine if too much land zoned in this category is located other than adjacent to the rail line, or if insufficient amounts are located adjacent to the rail line. Too large an amount of land planned and zoned for industrial/commercial use, other than along the rail line, will not help to enhance use of the rail line.
3. The local jurisdictions, in cooperation with State agencies, should do whatever is possible to encourage existing local business to use rail services.
4. The local jurisdictions and the State should do whatever is possible to encourage new businesses of a rail use type to locate along the right-of-way.
5. The State Railroad Administration must determine the economic feasibility of restoring the Monocacy River Bridge and take appropriate action.

AREAS OF CRITICAL STATE CONCERN

Site Name FREDERICK SECONDARY (north) R8

County CARROLL Acreage N/A Date Designated JAN.1981



AREAS OF CRITICAL STATE CONCERN

Site Name FREDERICK SECONDARY (south)

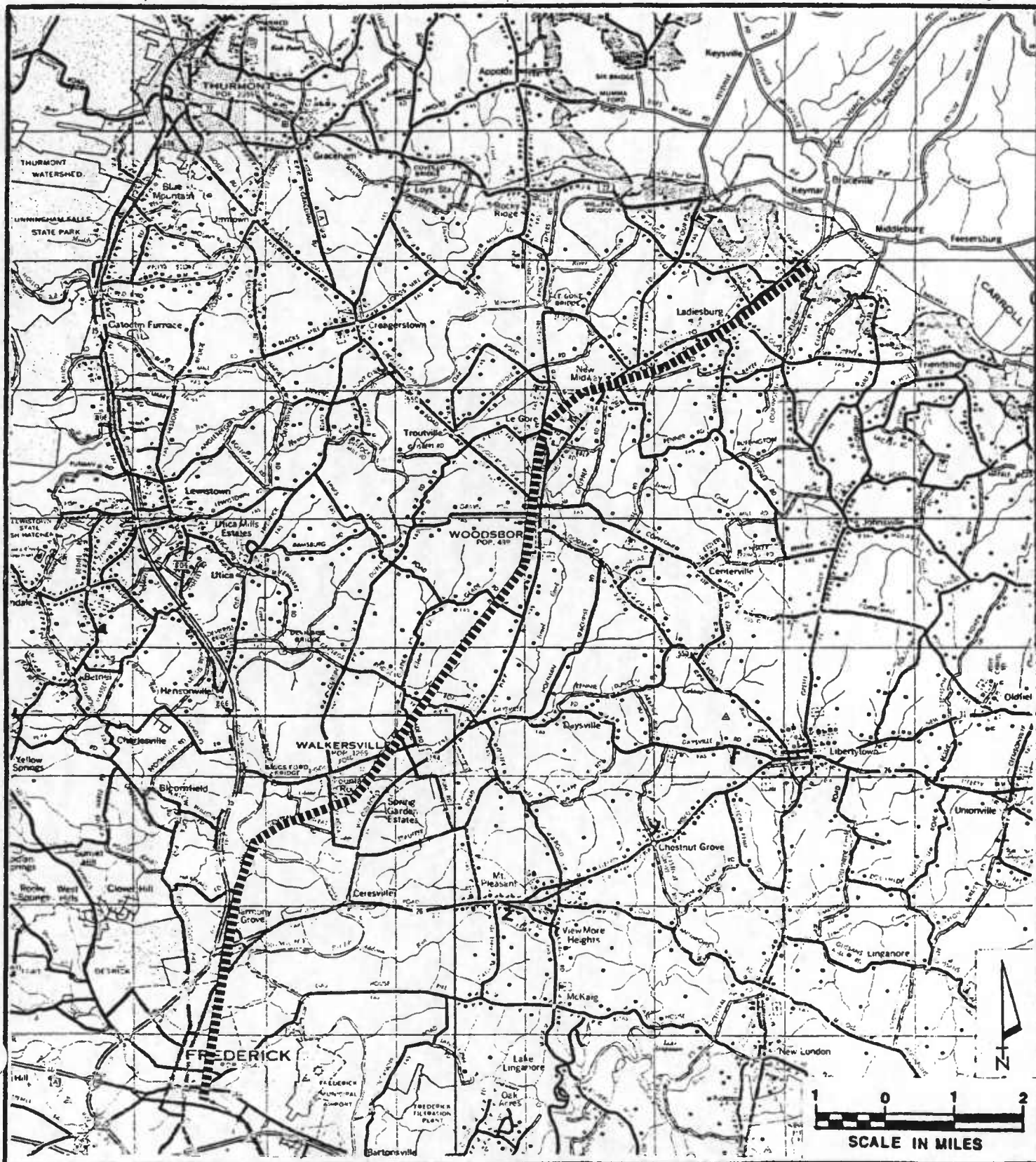
R8

County FREDERICK

Acreage N/A

Date Designated JAN.1981

MATCH A



CENTREVILLE AND CHESTERTOWN SECONDARIES

CLASS: Protection and Enhancement
of Rail Service

SITE NUMBER: R 9 and R 10

LOCATION: Centreville Secondary (R 9): From Centreville, Queen Anne's County through Price, Barclay, Sudlersville in Queen Anne's County and Millington and Massey in Kent County to Townsend, Delaware

Chestertown Secondary (R 10): From Chestertown, Kent County to Massey in Kent County

AREA DESCRIPTION:

These lines traverse a rural area which is relatively flat and dominated by agricultural land and related activities. There are a few small scattered towns with Chestertown and Centreville the only large urban centers. The Centreville line to Townsend is 34.9 miles, of which 29.9 are in Maryland. The Chestertown line is 20.3 miles long. These branches of the Delmarva Mainline, are jointly operated by the Maryland and Delaware Railroad under an agreement with the Maryland Department of Transportation, which leases the lines from the Penn Central Corporation. During FY 1980, the lines generated 898 carloads of which 91% were inbound. Service is provided twice a week to all points on the lines including the 13 regular rail users located on the lines. Major commodities include fertilizers, chemicals, feed, field crops, lumber, petroleum products, farm machinery, paper, millwork, and beverages. Overall traffic has been relatively stable, with increased usage occurring at some stations. The State's rehabilitation program has been completed to Class I (10 mph) standards.

The State of Delaware has designated the portion of the line within Delaware for a continuation subsidy under its State Rail Plan. The federal share has

been obtained from Delaware entitlement funds. Queen Anne's County and Kent County have executed agreements with the Department to guarantee a portion of lease and taxes through June 1981.

OWNERSHIP PATTERN: Penn Central Corporation.

CURRENT PLANS AND ZONING:

These lines pass through an area of predominantly agricultural zoning. Along the lines at the various small communities they connect, Worton, Lynch, Kennedyville, Massey, Price, Barclay, Suderlsville and Millington, there are small areas of mixed industrial/commercial zones and some residential. Within and adjacent to the corporate limits of the two large towns on the lines, Centreville and Chestertown, there are larger areas of industrial/commercial zoning and some residential zoning.

CONTINUING PLANNING AND STUDIES:

The State Rail Administration also prepares the annual update of the Maryland State Rail Plan. This plan contains detailed information concerning State rail operations and the policies and efforts the State is utilizing to promote rail transportation.

THREATS AND PROBLEMS:

The operation of the Centreville and Chestertown lines in FY 1980 produced a \$264,100 deficit which was covered by the subsidy program. With the Federal share (70%) of this subsidy ending after FY 1981, the State Railroad Administration is planning to provide additional financial assistance in order to keep the line operating. Considering the limitations placed upon the State by competing demands on available funding resources, this line might face abandonment if additional traffic is not generated. In the next few years, the growth in traffic will have to reach a level where the line can at least pay its own operating cost or the State may determine the line to be too expensive to justify continued State investment.

The current lack of traffic growth and funding constraints has, in addition, caused the original plan to upgrade the lines to Federal Railroad Administration

(FRA) Class II (25 mph) track standards to be deferred. The operator, using the improved track, would have been able to serve each line (on alternate days) up to three days per week with little or no overtime required. Service could have been much improved and at a lower cost to the operator.

It is not clear how long the State and local jurisdictions will be disposed to continue the subsidies if traffic doesn't continue to improve. Therefore, the line's traffic must be increased or its future is uncertain.

MANAGEMENT:

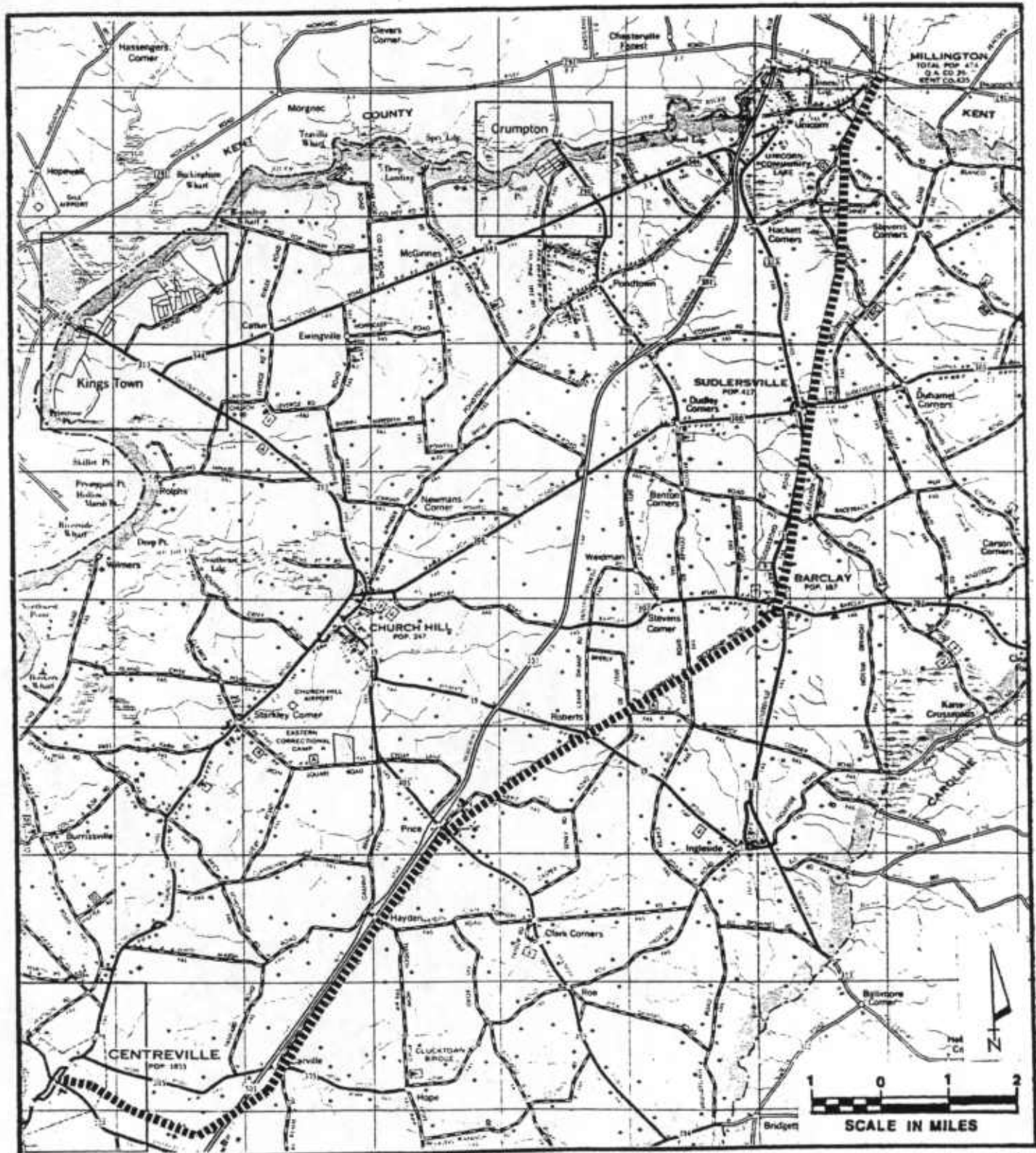
1. The local jurisdictions should reevaluate their current zoning and comprehensive plans to determine if the land use adjacent to the right-of-way is consistent and compatible with future potential rail activities.
2. Further, the local jurisdictions should analyze the magnitude and location of sites of undeveloped industrial/commercial zoning to determine if too much land zoned in this category is located other than adjacent to the rail line, or if insufficient amounts are located adjacent to the rail line. Too large an amount of land planned and zoned for industrial/commercial use, other than along the rail line, will not help to enhance use of the rail line.
3. The local jurisdictions, in cooperation with State agencies, should do whatever is possible to encourage existing local business to use rail services.
4. The local jurisdictions and the State should do whatever is possible to encourage new businesses of a rail use type to locate along the right-of-way.

AREAS OF CRITICAL STATE CONCERN

Site Name CENTREVILLE SECONDARY (south) R9

County QUEEN ANNE'S Acreage N/A Date Designated JAN.1981

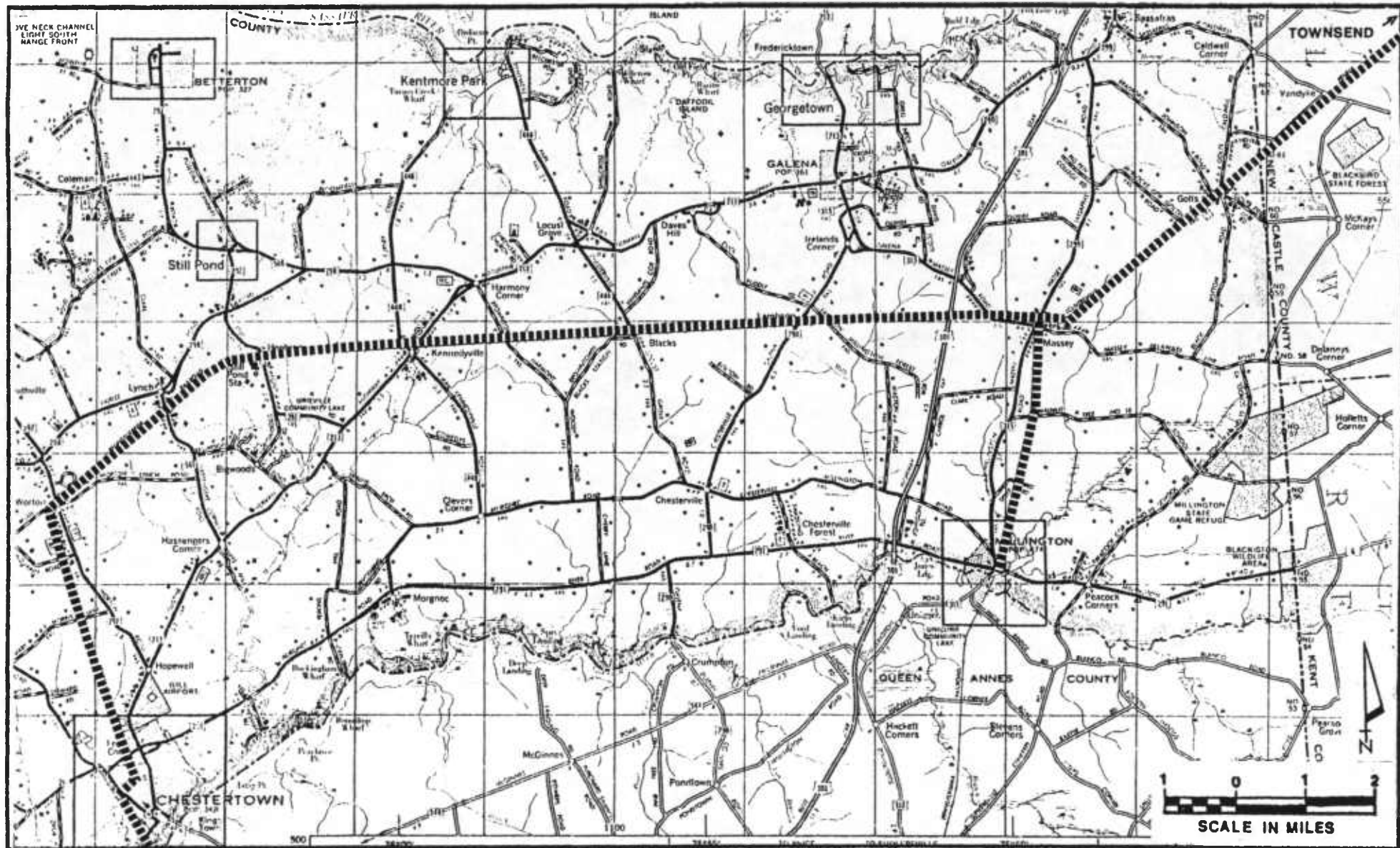
MATCH A



AREAS OF CRITICAL STATE CONCERN

Site Name CHESTERTOWN SECONDARY & CENTREVILLE SECONDARY (north) R9 - R10

County KENT Acreage N/A Date Designated JAN. 1981



MATCH A

Sheet 2 of 2

CRISFIELD SECONDARY

CLASS: Protection and Enhancement
of Rail Service

SITE NUMBER: R 11

LOCATION: From King's Creek to Crisfield, Somerset County.

AREA DESCRIPTION:

This line traverses an area of flat terrain which is dominated by agricultural and forested land. There are only a few small communities scattered along the 16.3 mile long line. The town of Crisfield is the only significant urban area. No rail service has been provided on this branch for several years. The line was allowed to be abandoned upon the demise of the Penn Central. There were only 68 carloads generated in 1973. Service at that time was limited to one trip per week to only four regular rail users. Major commodities were fresh, canned and frozen vegetables.

OWNERSHIP PATTERN: Penn Central Corporation.

CURRENT PLANS AND ZONING:

The area along the railroad from King's Creek to Crisfield is zoned primarily agriculture with a mixture of zoning categories at the small unincorporated settlements of Westover, Kingston, and Marion, and the City of Crisfield. This mixture includes a wide variety of residential, industrial and commercial categories. Crisfield has by far the largest amounts of these three categories.

CONTINUING PLANNING AND STUDIES:

The State Rail Administration annually updates the Maryland State Rail Plan which contains detailed information concerning State rail operations and the policies and efforts the State is using to promote rail transportation.

THREATS AND PROBLEMS:

The line has been abandoned because of its lack of a sufficient volume of business to support the line without a very large subsidy. The estimated annual subsidy for the line was \$340,000 in 1976, more than six times the quantifiable impacts of abandoning service. Since service at this time is not a viable option, the problem or threat concerning this line is the need to preserve the right-of-way for future use. The right-of-way must be kept from being broken up by sale to adjacent land owners and being rezoned, and developed for other uses.

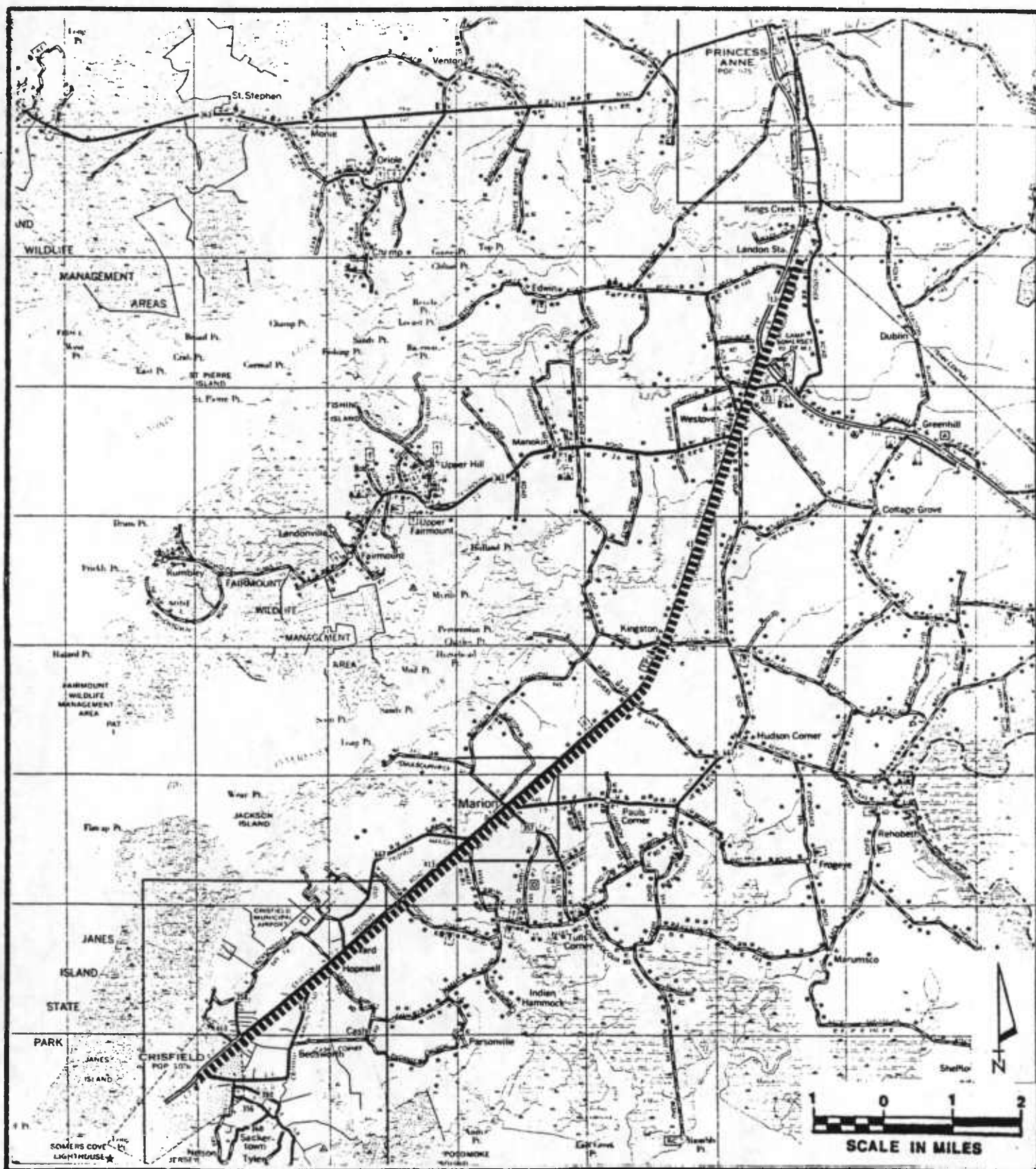
MANAGEMENT:

1. The local jurisdictions should reevaluate their current zoning and comprehensive plans to determine if the land use adjacent to the right-of-way is consistent and compatible with future potential rail activities.
2. Further, the local jurisdictions should analyze the magnitude and location of sites of undeveloped industrial/commercial zoning to determine if too much land zoned in this category is located other than adjacent to the rail line, or if insufficient amounts are located adjacent to the rail line. Too large an amount of land planned and zoned for industrial/commercial use, other than along the rail line, will not help to enhance use of the rail line.
3. The local jurisdictions, in cooperation with State agencies, should do whatever is possible to encourage existing local business to use rail services.
4. The local jurisdictions, in cooperation with State agencies, should do whatever is possible to encourage new businesses of a rail use type to locate along the right-of-way.

AREAS OF CRITICAL STATE CONCERN

Site Name CRISFIELD SECONDARY RIGHT-OF-WAY R11

County SOMERSET Acreage N/A Date Designated JAN.1981



MARDELA TRACK (HEBRON BRANCH)

CLASS: Protection and Enhancement
of Rail Service

SITE NUMBER: R 12

LOCATION: From Salisbury to Hebron, Wicomico County

AREA DESCRIPTION:

This rail line is a 4.2 mile branch off the Conrail Delmarva Peninsula Mainline. It transverses a relatively flat area which is suburbanizing due to the growth of the City of Salisbury. The branch was operated, until recently, by Conrail under an agreement with the Maryland Department of Transportation. Prior to the end of operation in April 1981, the four regular rail users on the line received limited service on a schedule alternating between one trip per week and two trips per week. The branch generated 221 carloads in FY 1980, of which approximately 94 percent were inbound. The major commodities moved on the lines are paperboard containers, fertilizer ingredients, feed ingredients and lumber.

However, by March 23, 1981, the State Railroad Administration had determined that there was insufficient use of the line to warrant continued subsidy and operation. The decision to terminate service was based on a poll of the four shippers who use the line and an analysis of traffic and deficits. During the 12 months ending January 31, 1981, traffic on the line totaled 116 carloads, 43 percent less than for the corresponding period of the previous year. Shippers stated that they were unwilling to pay a \$122 per car surcharge, the local share (30 percent) of the operating deficit, to continue service and that they would not be adversely impacted by its termination. The total subsidy per carload at this low level of use was estimated to be \$407, a cost the shippers stated as not being competitive with other forms of transportation, chiefly trucks.

OWNERSHIP PATTERNS: Penn Central Corporation

CURRENT PLANS AND ZONING:

The zoning along the railroad from Salisbury to Hebron is predominantly industrial. There is a mixture of small residential zones scattered along the line. There are, in addition, two commercial areas, located adjacent to the railroad in the vicinity of U.S. Route 13 within the City of Salisbury.

CONTINUING PLANNING AND STUDIES:

The State Rail Administration annually updates the Maryland State Rail Plan, which contains detailed information concerning State rail operations and the policies and efforts the State is utilizing to promote rail transportation.

THREATS AND PROBLEMS:

The operation of the Salisbury to Hebron Branch in FY 1980 produced a \$36,000 deficit which was covered by a subsidy. This, coupled with the increased costs and lower traffic level of the first six months of FY 1981 has brought about the termination of service by the State. Unless a new commercial enterprise, with major rail use potential, is located along the line, restoration of operation is not anticipated in the foreseeable future. However, the preservation of the right-of-way for possible future rail use must be addressed at this time.

MANAGEMENT:

1. The local jurisdictions should re-evaluate their current zoning and comprehensive plans to determine if the land use adjacent to the right-of-way is consistent and compatible with future potential rail activities.
2. Further, the local jurisdictions should analyze the magnitude and location of sites of undeveloped industrial/commercial zoning to determine if too much land in this category is located other than adjacent to the rail line, or if insufficient amounts are located adjacent to the rail

line. Too large an amount of land planned and zoned for industrial/commercial use, other than along the rail line, will not help to enhance use of the rail line.

3. The local jurisdictions and the State should work together to do whatever is possible to encourage new businesses of a rail user type to locate along the right-of-way.

4. Since it has been determined that it is not economically feasible to continue subsidies, State and local actions should be taken to assure that the right-of-way remains intact in order to restore service when needed or feasible.

AREAS OF CRITICAL STATE CONCERN

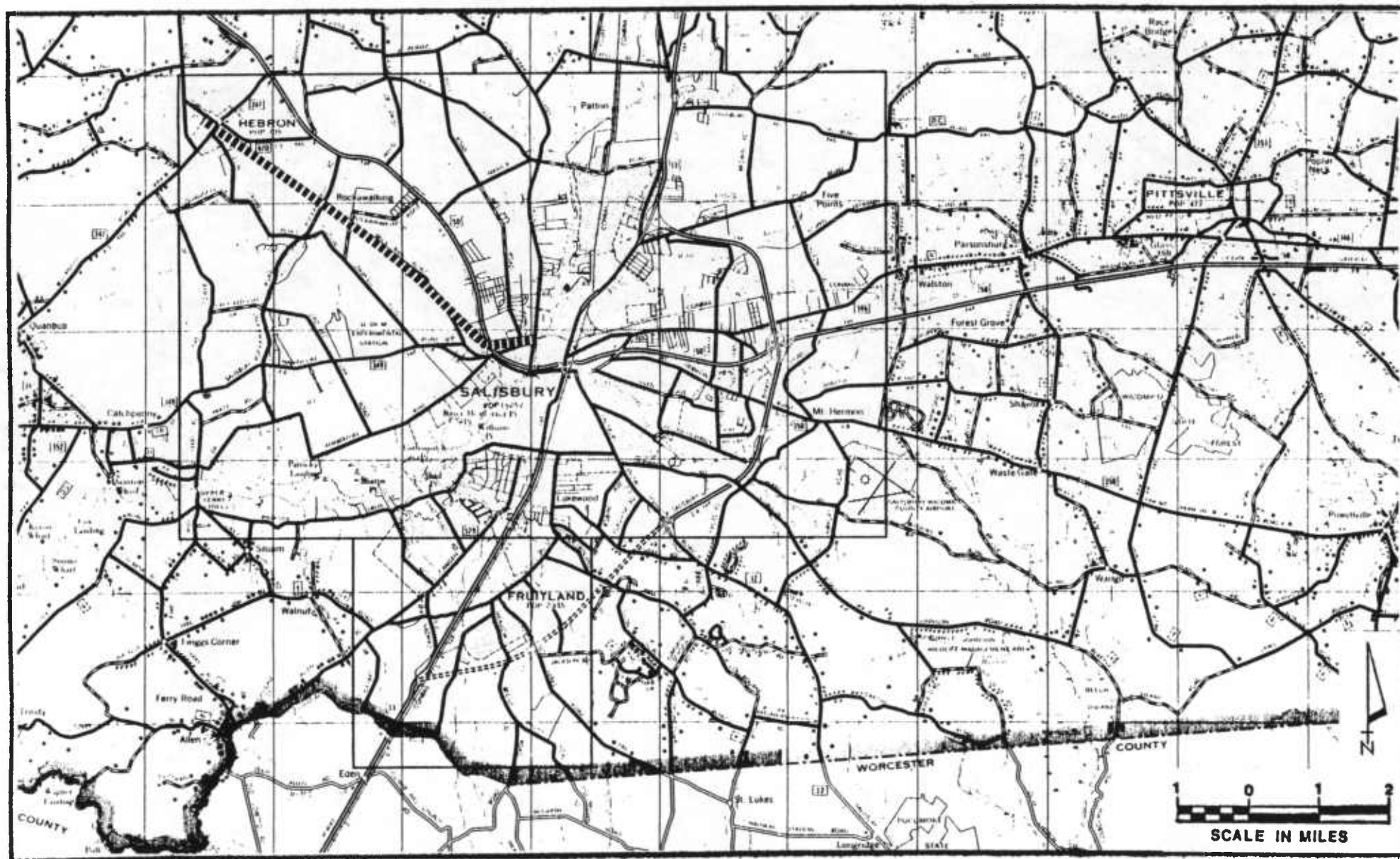
Site Name MARDELA TRACK (HEBRON BRANCH)

R12

County WICOMICO

Acreage N/A

Date Designated JAN. 1981



3-54

POCOMOKE SECONDARY

CLASS: Protection and Enhancement
of Rail Service

SITE NUMBER: R 13

LOCATION: From Pocomoke City, Worcester County to Virginia State Line

AREA DESCRIPTION:

This line operates through an agricultural area which has little relief. Pocomoke City is the only population center in the area. The line is only 4.9 miles long in Maryland and is only a small portion of the 63.5 mile Delmarva mainline operated by the Virginia and Maryland Railroad from Pocomoke City and south to Norfolk, Virginia, utilizing a carfloat between Cape Charles and Little Creek, Virginia. The Virginia and Maryland Railroad operates the line with a subsidy and by agreement with the Accomack - Northampton Transportation District through which it passes in Virginia. The District leases the line from the Penn Central Corporation. Maryland shares its federal entitlement funds with Virginia to help subsidize the line. The route carried approximately 9,400 carloads in FY 1979 of which 11% was through traffic, 26% destined for shippers in Maryland and Delaware and the remaining traffic was for Virginia shippers. This line is an alternative route used by trains with high and wide loads to avoid clearance problems on the Northeast Corridor mainline. Approximately 68% of the line has been upgraded to FRA Class II (25 mph operations), including the section in Maryland.

OWNERSHIP PATTERN: Penn Central Corporation.

CURRENT LOCAL PLANS AND ZONING:

The area along this line from Pocomoke City to the Virginia State Line is predominantly zoned industrial and agricultural. Generally, the area

adjacent to the railroad on the east side is zoned industrial and the area on the west side is classified as agricultural. The area through which the line passes within the corporate limits of Pocomoke City is a mixture of various zoning categories including general and light industrial, general business, and R-1 and R-2 residential.

CONTINUING PLANNING AND STUDIES:

The Accomack and Northampton Transportation District is currently negotiating for the purchase of the line from the Penn Central Corporation.

The State Rail Administration also annually updates the Maryland State Rail Plan which contains detailed information concerning State rail operations and the policies and efforts the State is utilizing to promote rail transportation.

THREATS AND PROBLEMS:

Continuation of this line is necessary in order to provide through services to and from the Virginia portion of the Delmarva Peninsula, and to and from the carfloat service from Little Creek, Virginia, to Cape Charles, Virginia. Although no specific impact calculations have been made, it generally has been agreed that through service along the mainline is valuable because it provides maximum shipping flexibility to most of the shippers on every branch line in both Maryland and Delaware. Also, the end of the carfloat would leave the Peninsula with only one rail connection to the rest of the country. This is a bridge across the Chesapeake and Delaware Canal, which is subject to long periods of non-operation due to accidents. Therefore, many shippers could suffer from the abandonment of the carfloat. There is general consensus that through service is vital to the future economic development of the entire Delmarva Peninsula. The problem with maintaining this through route is the need to increase traffic to a level which will allow economic operation by the Virginia and Maryland Railroad without subsidy.

MANAGEMENT:

1. The local jurisdictions should reevaluate their current zoning and comprehensive plans to determine if the land use adjacent to the right-of-way

is consistent and compatible with future potential rail activities.

2. The local jurisdictions, in cooperation with State agencies, should do whatever is possible to encourage existing local business to use rail services.

3. The local jurisdictions, and the State, should do whatever is possible to encourage new industrial and commercial business to locate along the right-of-way.

4. The Maryland Department of Transportation should continue to support the Accomack-Northampton Transportation District in its efforts to improve service on this line.

AREAS OF CRITICAL STATE CONCERN

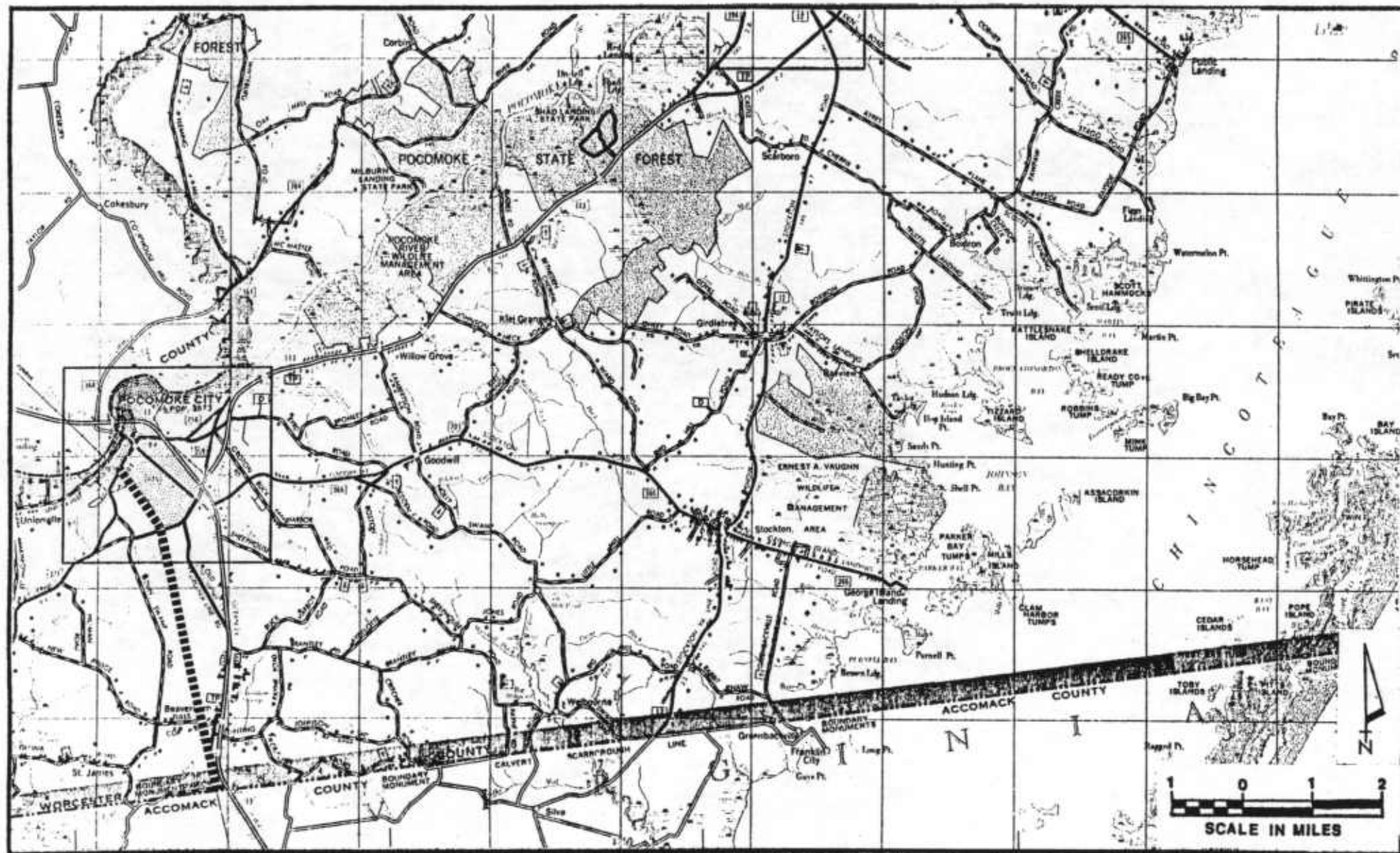
Site Name POCOMOKE SECONDARY

R13

County WORCESTER

Acreage N/A

Date Designated JAN. 1981



SNOW HILL SECONDARY AND OCEAN CITY TRACK

CLASS: Protection and Enhancement
of Rail Service

SITE NUMBER: R 14 and R 15

LOCATION: Snow Hill Secondary (R 14): From Snow Hill, Worcester County,
through Berlin to Delaware State Line.

Ocean City Track (R 15): From Berlin to West Ocean City,
Worcester County.

AREA DESCRIPTION:

These lines traverse a very flat area of small scattered communities surrounded by extensive agricultural lands. The line from Snow Hill to the Delaware Line is 22.6 miles in length. The Ocean City Track extends east 6.5 miles from Berlin. Conrail operates and owns the Snow Hill Secondary. The Ocean City Track was operated by the Ocean City Western Railroad but is currently abandoned. Conrail provides two weekly trips to service customers on the Snow Hill line, which generated 2,700 carloads in FY 1979. Major commodities include fertilizer, chemicals, feed and lumber.

OWNERSHIP PATTERN: Conrail

CURRENT PLANS AND ZONING:

The area along the line from Snow Hill through Berlin to the Delaware State line and the branch from Berlin to West Ocean City is zoned predominantly agricultural. There is a mixture of industrial, commercial, and residential zoning in the incorporated towns of Snow Hill, Berlin, and West Ocean City and smaller amounts of the same mix in the unincorporated towns of Newark, Showell, and Bishop.

CONTINUING PLANNING AND STUDIES:

Discussed briefly in the Maryland State Rail Plan.

THREATS AND PROBLEMS:

In the future, if traffic does not increase Conrail might decide to apply to abandon the Snow Hill line rather than absorb increased deficits. The local jurisdictions and the State need to work together with local and potential rail users to increase carloads on the line. Increased traffic would make continued and improved service more attractive and financially sound for Conrail.

The Ocean City line's right-of-way is in danger of loss if rail service is not restored or the right-of-way preserved.

MANAGEMENT:

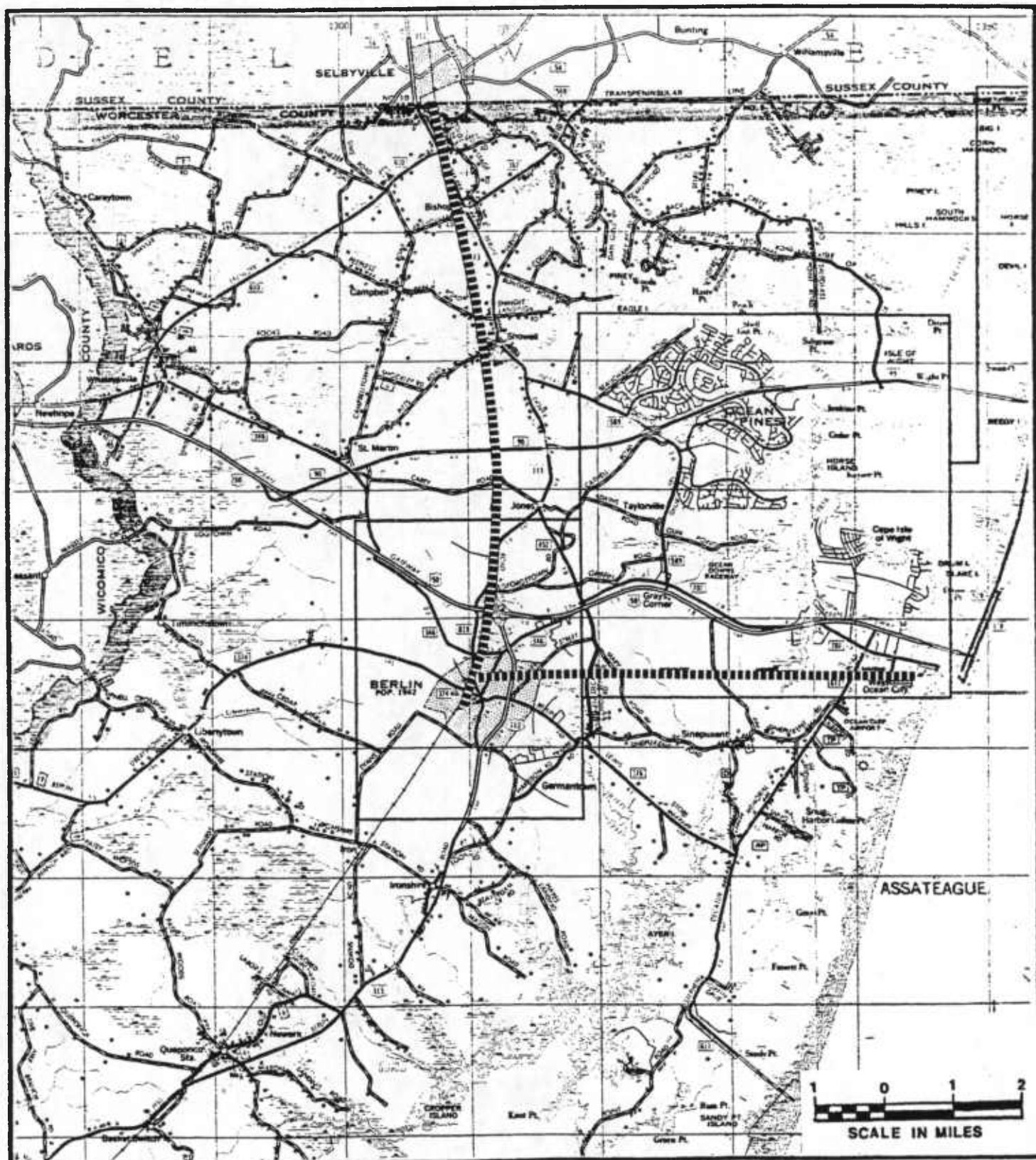
1. The local jurisdictions should reevaluate their current zoning and comprehensive plans to determine if the land use adjacent to the right-of-way is consistent and compatible with future potential rail activities.
2. Further, the local jurisdictions should analyze the magnitude and location of sites of undeveloped industrial/commercial zoning to determine if too much land zoned in this category is located other than adjacent to the rail line, or if insufficient amounts are located adjacent to the rail line. Too large an amount of land planned and zoned for industrial/commercial use, other than along the rail line, will not help to enhance use of the rail line.
3. The local jurisdictions and the State should work with Conrail to do whatever is possible to encourage existing local companies to use rail services.
4. The local jurisdictions and the State, in cooperation with Conrail, should do whatever is possible to encourage new businesses of a rail use type to locate along the right-of-way.

5. The State Railroad Administration and the County should analyze the need and the economic feasibility of preserving the Ocean City right-of-way and take appropriate action.

AREAS OF CRITICAL STATE CONCERN

Site Name SNOW HILL SECONDARY (north) & OCEAN CITY TRACK R14-R15

County WORCESTER Acreage N/A Date Designated JAN.1981



AREAS OF CRITICAL STATE CONCERN

Site Name SNOW HILL SECONDARY (south)

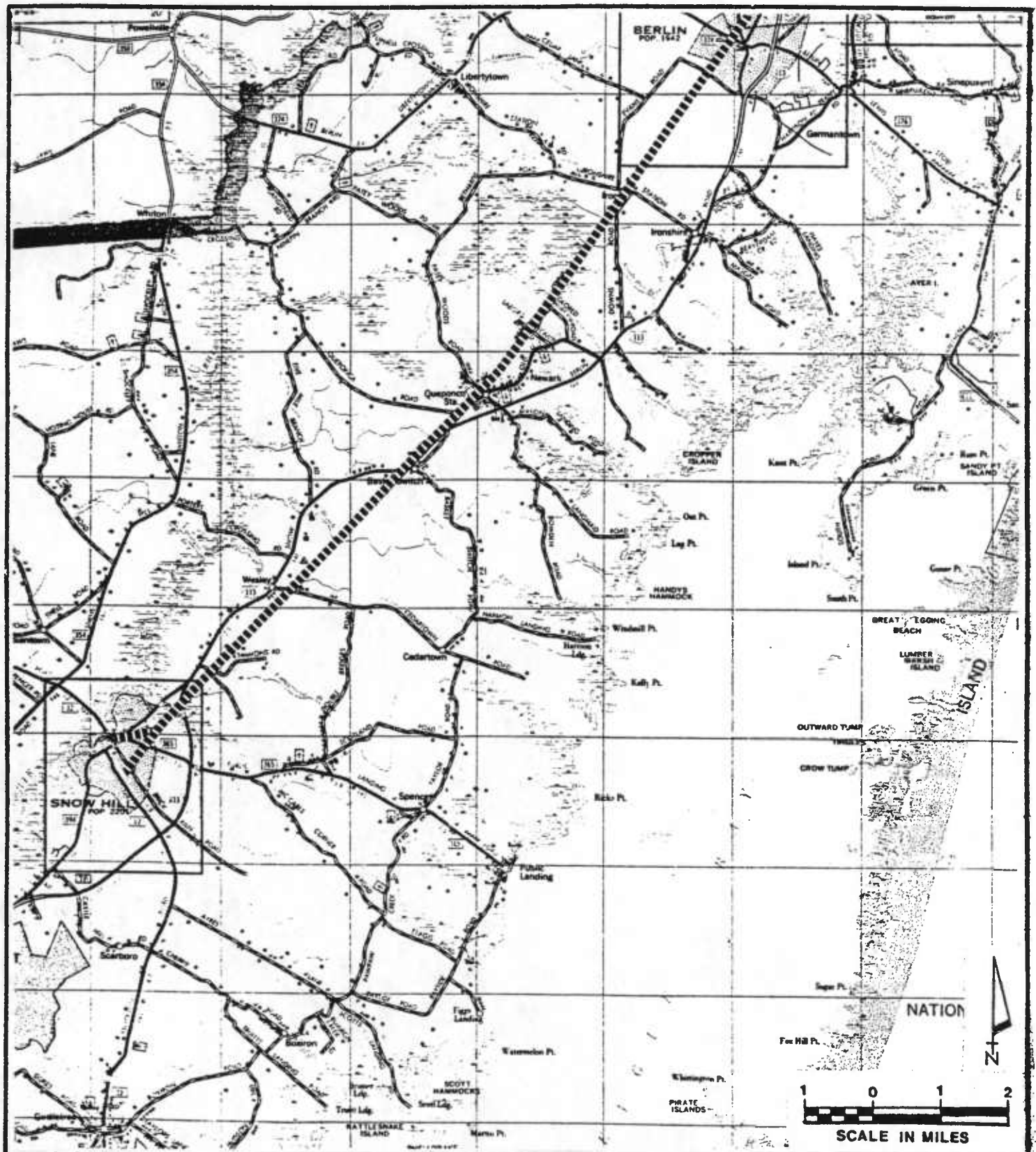
R14

County WORCESTER

Acreage N/A

Date Designated JAN.1981

MATCH A



Chapter Four

SPECIAL AREAS

CHAPTER FOUR: SPECIAL AREAS

I. DEFINITION

These areas do not fit into the current generic classes selected for designating areas. Nevertheless, it was felt that they were of sufficient importance to be designated at this time. They may be incorporated into a future generic class. Note, however, that the wetlands of the Pocomoke River are referenced under the Tidal and Non-Tidal Wetlands class areas. The map on page 3-2 in Chapter Three shows the general location of these Special Areas.

II. AREA DESCRIPTIONS AND MAPS

POCOMOKE RIVER

CLASS: Special Area

SITE NUMBER: SA 1 (TN 14)

LOCATION:

The Pocomoke River is located in the lower eastern shore in Somerset, Worcester, and Wicomico Counties, as it flows 54 miles in Maryland from the Delaware State Line to Pocomoke Sound and the Chesapeake Bay.

AREA DESCRIPTION:

The Pocomoke River designation includes the River from bank to bank and all those lands immediately adjacent thereto which are classified as muck, muck and peat, swamp, mixed alluvial, and tidal marsh in the Soil Surveys prepared for Somerset, Wicomico and Worcester Counties by the U. S. Soil Conservation Service. This designation does not extend beyond a point one-half ($\frac{1}{2}$) mile from the junction of any tributary with the banks of the Pocomoke River. The designated area within the corporate limits of Snow Hill and Pocomoke City are those lands shown as the 100-year floodplain as identified on the Flood Insurance Rate Maps effective May 15, 1980 and September 3, 1980 respectively.

The Pocomoke River is a major tributary of the Chesapeake Bay which begins in the Great Cypress Swamp several miles north of the Maryland-Delaware State Line and meanders southward for 54 miles in Maryland before emptying into the Pocomoke Sound. This officially designated State "Scenic River" winds its way through forests, farmlands, towns, wetlands, and cypress swamps; all of which determine its multi-purpose uses and its scenic and picturesque nature.

Bald Cypress swamps, the northernmost along the Atlantic Coast, and other wet areas border the entire length of the Pocomoke. The river and these swamps provide the meeting ground for major southern and northern plant species - a fact that, in itself, makes the river unique. The dense, wooded shoreline and the lack of a definite bank in most areas characterizes the river providing a beautiful setting. Most of the Pocomoke is inaccessible because of the jungle-like community of plants in the forest swamps.

Fish and wildlife abound in the treasured habitat of the Pocomoke. The endangered Bryant Fox Squirrel (commonly known as the Delmarva Fox Squirrel), deer, wood ducks and other waterfowl are all found in the area. The Lower Pocomoke, which is brackish as far upstream as Pocomoke City, is rich in shellfish propagation and harvesting areas and in fish and other aquatic life propagation areas. Excellent fishing and hunting areas also exist above Pocomoke City.

As befitting a river of such length, the Pocomoke has three different characters. From the Pocomoke Sound to a point above Whiton's Crossing, the river is tidal - a distance of 41 miles. Between Porter's and Whiton's Crossings, the river becomes a small, meandering stream surrounded by thick forests and brush with numerous clusters of relatively undisturbed cypress trees in swampy areas. A "debris dam" is located approximately 1½ miles south of Whiton's Crossing near the Wicomico-Worcester County Line. The portion of the River between the "debris dam" and the Delaware State Line, approximately 14.4 miles, has undergone channel modification.

The Pocomoke, an interstate watershed, drains 310,000 acres of land on the Delmarva Peninsula in Delaware, Maryland and Virginia. There are five counties in the Basin including three in Maryland, one in Delaware. and one in Virginia. The three Maryland counties contain 92 percent of the area within the Basin with Worcester having the largest portion with 210,000 acres, or 68 percent of the total watershed.

Of the total 310,000 acres in the Basin, there are approximately 88,700 acres of cropland, 31,300 acres of pastureland, 173,300 acres of forest land, 3,600 acres of water, and 13,100 acres of rural-residential and

commercial areas. The Soil Conservation Service estimates that drainage is needed on 44,300 acres of the total cropland acreage. The Basin is also estimated to have 20,900 acres of interior wooded wetland.

Agriculture accounts for the largest portion of the total land use in the Basin. Principal field crops are corn and soybeans with some high value truck crops. Cash grain and poultry production are the two major farm types, representing over 80 percent of all farms. Forest lands are of three cover types: loblolly pine, bottomland hardwoods, and mixed oak pine.

Two municipalities border the main stem of the River - Snow Hill and Pocomoke City. The City of Salisbury, a major employment area, lies to the west of the Basin in Wicomico County; and Ocean City which attracts thousands of visitors lies to the east on the Atlantic Shore.

OWNERSHIP PATTERN:

Land along the Pocomoke River is in multiple ownership with most of the area held by private owners.

The State of Maryland is a major land owner in the Pocomoke Watershed with over 13,500 acres in the Pocomoke State Forest and the Cypress Forest and Swamp below Pocomoke City. Of this amount, 12,250 acres are in the Pocomoke State Forest located between Pocomoke City and Snow Hill on both sides of the River. Some of this State-owned land is within the designated area.

Both Pocomoke City and Snow Hill own small segments of the waterfront within the town limits. These areas are used for boat ramps, parks, and waterfront and open space.

CURRENT PLANS AND ZONING:

Lands adjacent to the Pocomoke are within 26 different zoning districts in the three counties and the towns of Pocomoke City and Snow Hill. There is little uniformity in uses, standards, or approaches for developing zoning categories which would recognize the unique attributes of the River.

Lands adjacent to the River in Worcester County are zoned "conservation". A "conservation" zone has been recommended for Wicomico County in its 1978 Comprehensive Plan.

Pocomoke City and Snow Hill have the only sewerage treatment plants adjacent to the River. Near the limits of the existing towns, most of the land is envisioned to be served by sewer systems. Willards, situated in Wicomico County's portion of the River Basin, has a sewer system and Pittsville is currently planning a system. Any development that occurs outside of these central system areas must depend on individual systems, regulated by the Health Department.

Flood insurance studies developed by HUD have been prepared for the Snow Hill and Pocomoke City segments of the River. Both municipalities as well as Worcester County have approved Flood Insurance Programs.

CONTINUING PLANNING AND STUDIES:

The Soil Conservation Service of the U. S. Department of Agriculture is currently conducting a special Pocomoke River Study to complement previous river basin studies. This effort will develop a plan for managing the flows and water levels of the river.

The Maryland Water Resources Administration has prepared a water quality management plan for the river basin. The plan is intended to provide overall direction and long-term policy guidance to federal, State and local efforts to attain water quality standards and to preserve waters of high quality in the Basin.

The Soil Conservation Service, the Maryland State Legislature and the U. S. Army Corps of Engineers, local government agencies, and private individuals and associations have studied or initiated numerous flood control, drainage and channelization projects for the Pocomoke River and its tributaries since 1840. Several projects are under construction, being studied, or in various stages of activity.

In 1970, the Pocomoke River was identified as a Scenic River by the State's Scenic River Task Force. Formal Scenic Rivers status was achieved in 1971 through an act of the Legislature. A specific plan is now being prepared by the Department of Natural Resources, in conjunction with the preparation

of a river basin plan by the U. S. Department of Agriculture, Soil Conservation Service.

In the 1980 Session of the Legislature, two large areas of land adjacent to the Pocomoke River were designated as wildlands. These include the 1,429 acre State-owned Cypress Swamp below Pocomoke City and 1,295 acres in three tracts of State-owned land located between Snow Hill and Pocomoke City in the Pocomoke State Forest.

The swamps adjacent to the Pocomoke in all three counties have been recommended as potential nominations to the National Natural Landmarks Program sponsored by the U. S. Department of Interior, Heritage Conservation and Recreation Service.

The River has been identified by the Department of Interior as a potential Recreation River under the provisions of Public Law 90-542, the National Wild and Scenic Rivers Act.

THREATS AND PROBLEMS:

The Pocomoke enjoys high water quality except for areas around Pocomoke City and Snow Hill where pollution exists. However, these two communities are in the process of improving their sewage treatment plants. Drainage, channelization, major land clearing activities and land filling pose serious threats to the Pocomoke.

The popularity of boating, fishing, and other water-oriented recreation activities on the Pocomoke indicates the great potential offered by the River. Pressures of increased public use on the Pocomoke represent a threat to the inherent resources which must be protected. Some tributary streams have been channelized for agricultural drainage, while other streams and the River itself are under consideration for channelization to promote drainage and navigation.

The Pocomoke is a classic case where the solution to one problem, for example, channelization to aid drainage to increase agricultural production, presents threats to the River's natural characteristics. For this reason, considerable

care must be exercised with the primary focus of preventing deterioration of the features that make the Pocomoke River an Area of Critical State Concern.

MANAGEMENT:

Development pressures are increasing throughout the Basin and are primarily influenced by the growth of Salisbury and Ocean City. There is no current policy or plan which incorporates the needs of the tri-county area into a comprehensive, coordinated policy oriented to the River.

Zoning provisions vary widely between the three counties for those districts encompassing the Pocomoke River and adjoining land areas.

Flood Insurance studies to investigate the existence and severity of flood hazards in the Towns of Snow Hill, Pocomoke City and Worcester County are completed. Their purpose was to aid in the administration of the National Flood Insurance Act of 1973. This information was used to convert Snow Hill, Pocomoke City, and Worcester County to the regular program of flood insurance of the Federal Insurance Administration (FIA). Further use of the information should be made by local, State and regional planners in their efforts to promote sound land use policies and floodplain protection. Work is underway to complete the Flood Insurance studies for Somerset and Wicomico Counties.

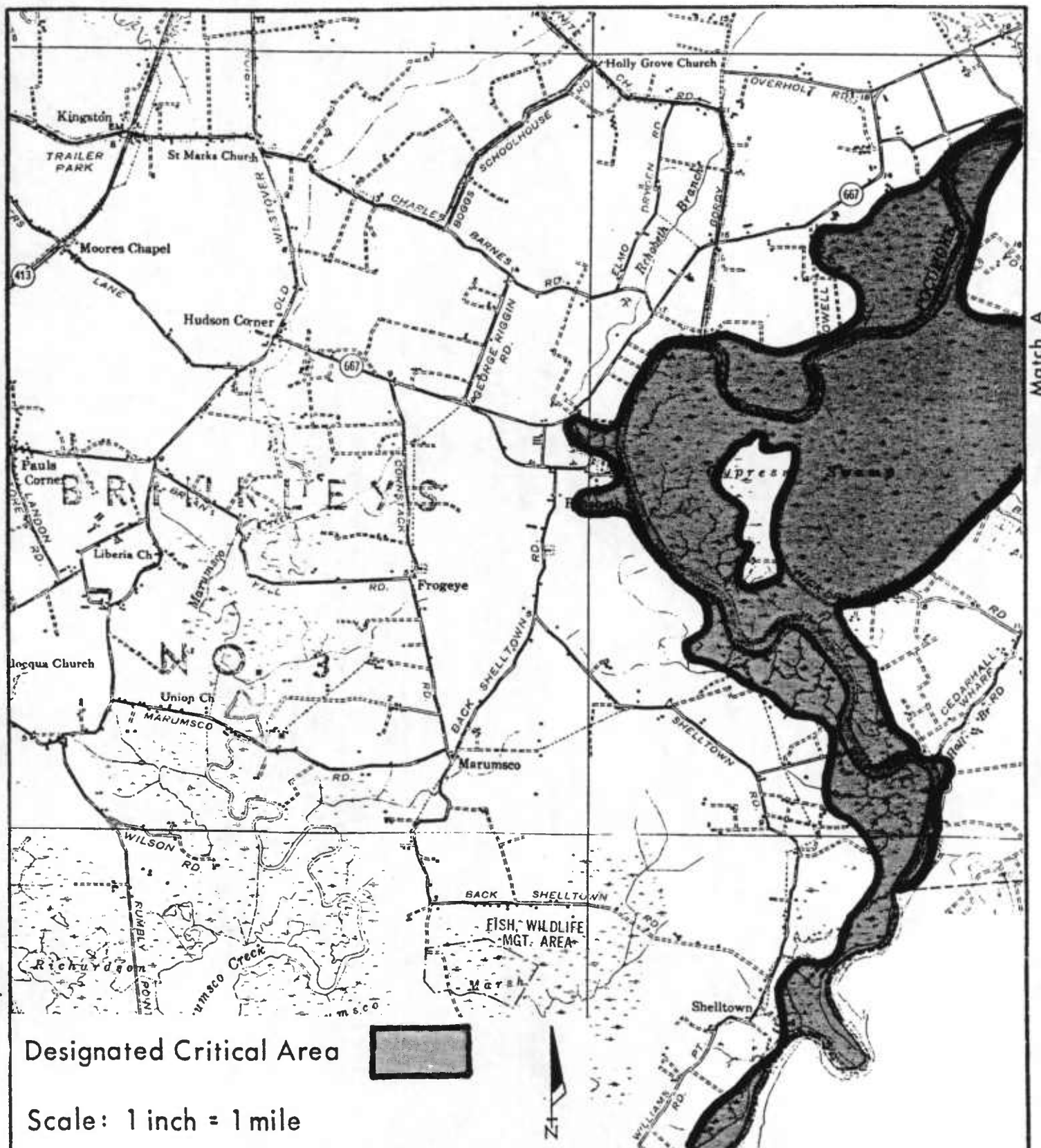
The work to fulfill the provisions of the Scenic Rivers Act should be expedited in order to provide a planning framework for maintaining the River's character.

Studies and programs for management of the Pocomoke River should recognize and address the economic, environmental and recreational needs and interests of those immediately affected as well as the interest of local jurisdictions and the State at large.

AREAS OF CRITICAL STATE CONCERN

Site Name POCOMOKE RIVER - SA1, TN14

County SOMERSET, WORCESTER & WICOMICO Acreage 18,700 Date Designated JAN.1981

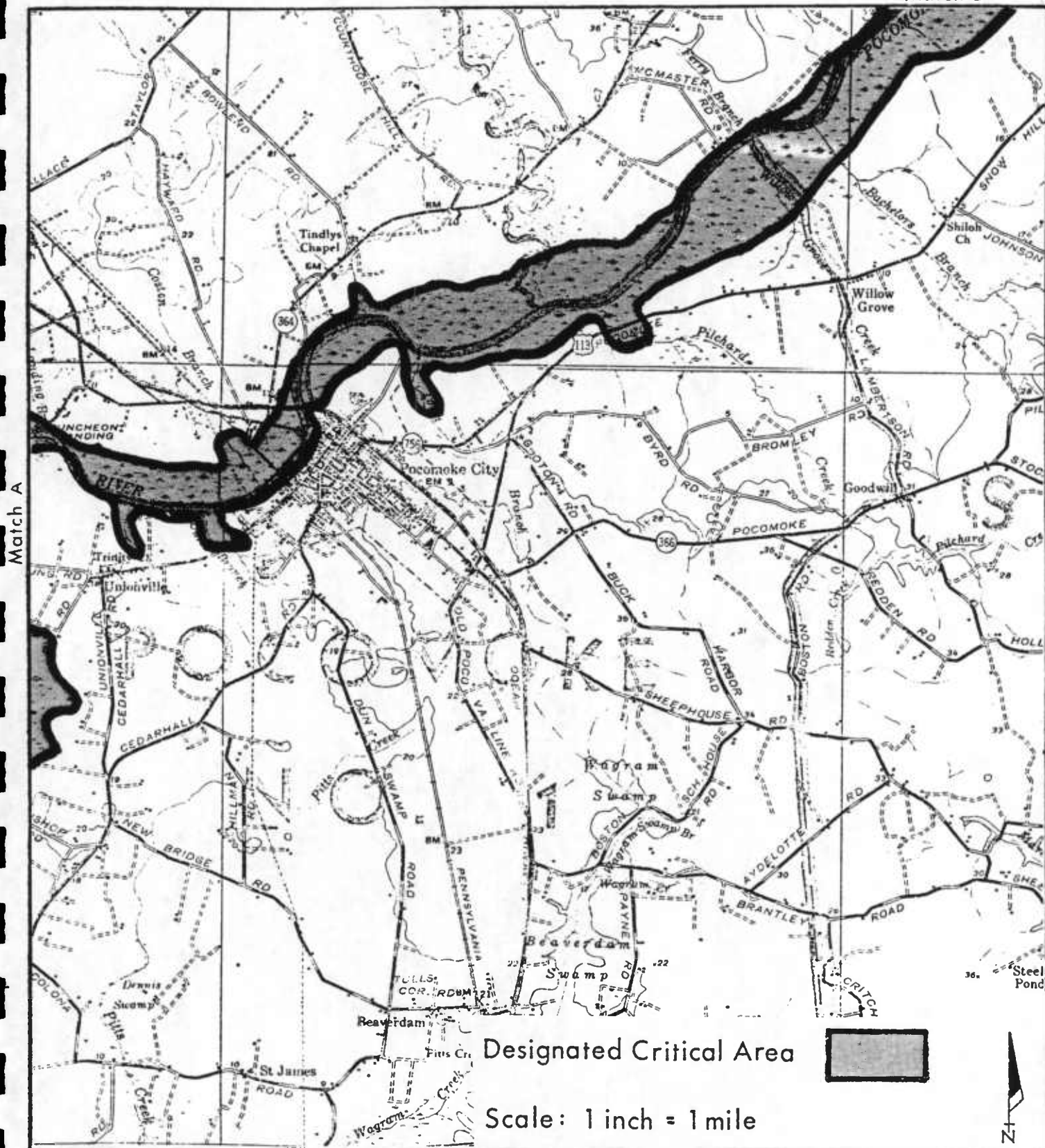


AREAS OF CRITICAL STATE CONCERN

Site Name POCOMOKE RIVER - SA1, TN14

County SOMERSET, WORCESTER & WICOMICO Acreage 18,700 Date Designated JAN.1981

Match B



AREAS OF CRITICAL STATE CONCERN

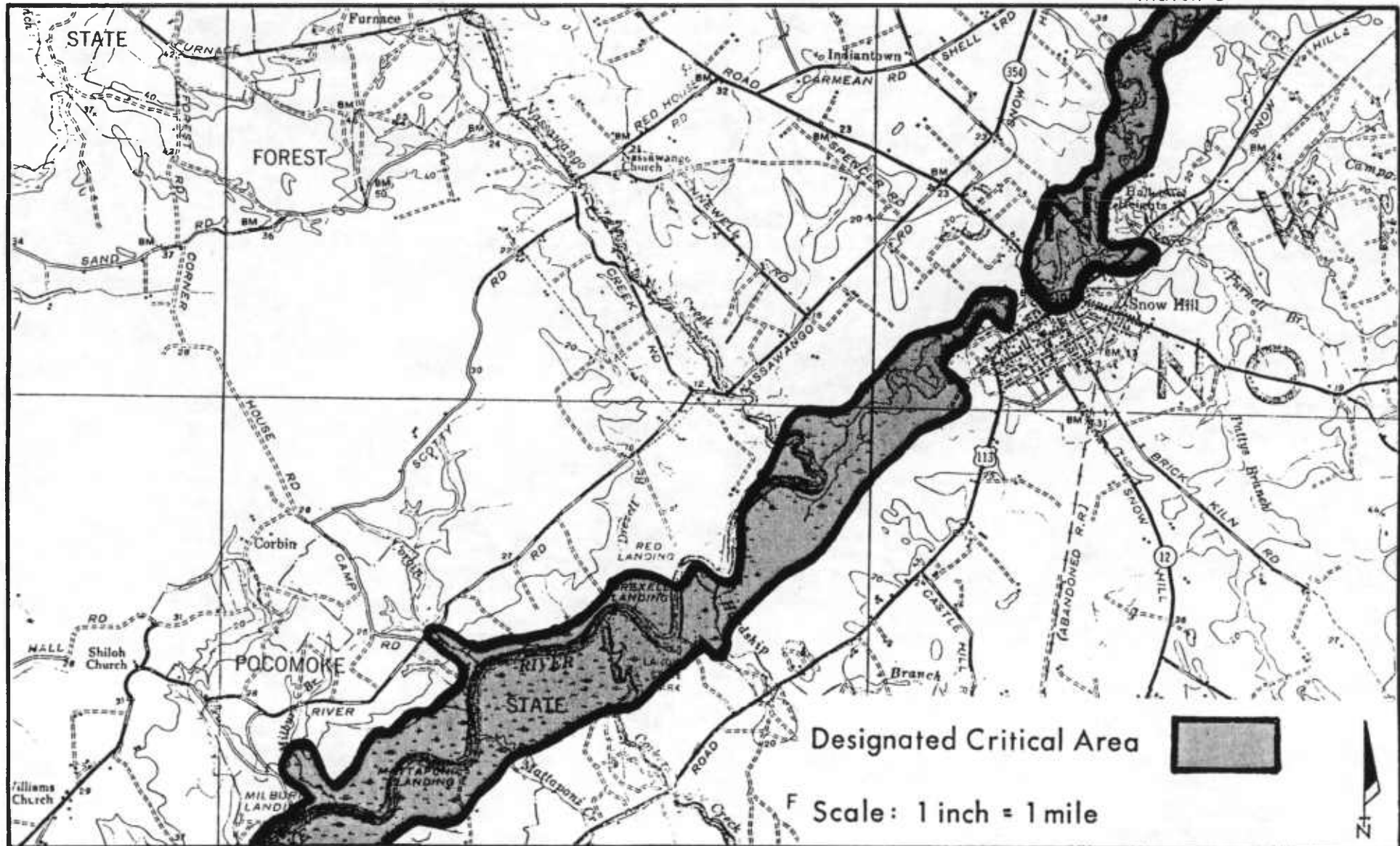
Site Name POCOMOKE RIVER-SA1, TN14

County SOMERSET, WORCESTER
& WICOMICO

Acreage 18,700

Date Designated JAN.1981

Match C



Match B

AREAS OF CRITICAL STATE CONCERN

Site Name POCOMOKE RIVER - SA1, TN14

County SOMERSET, WORCESTER
& WICOMICO

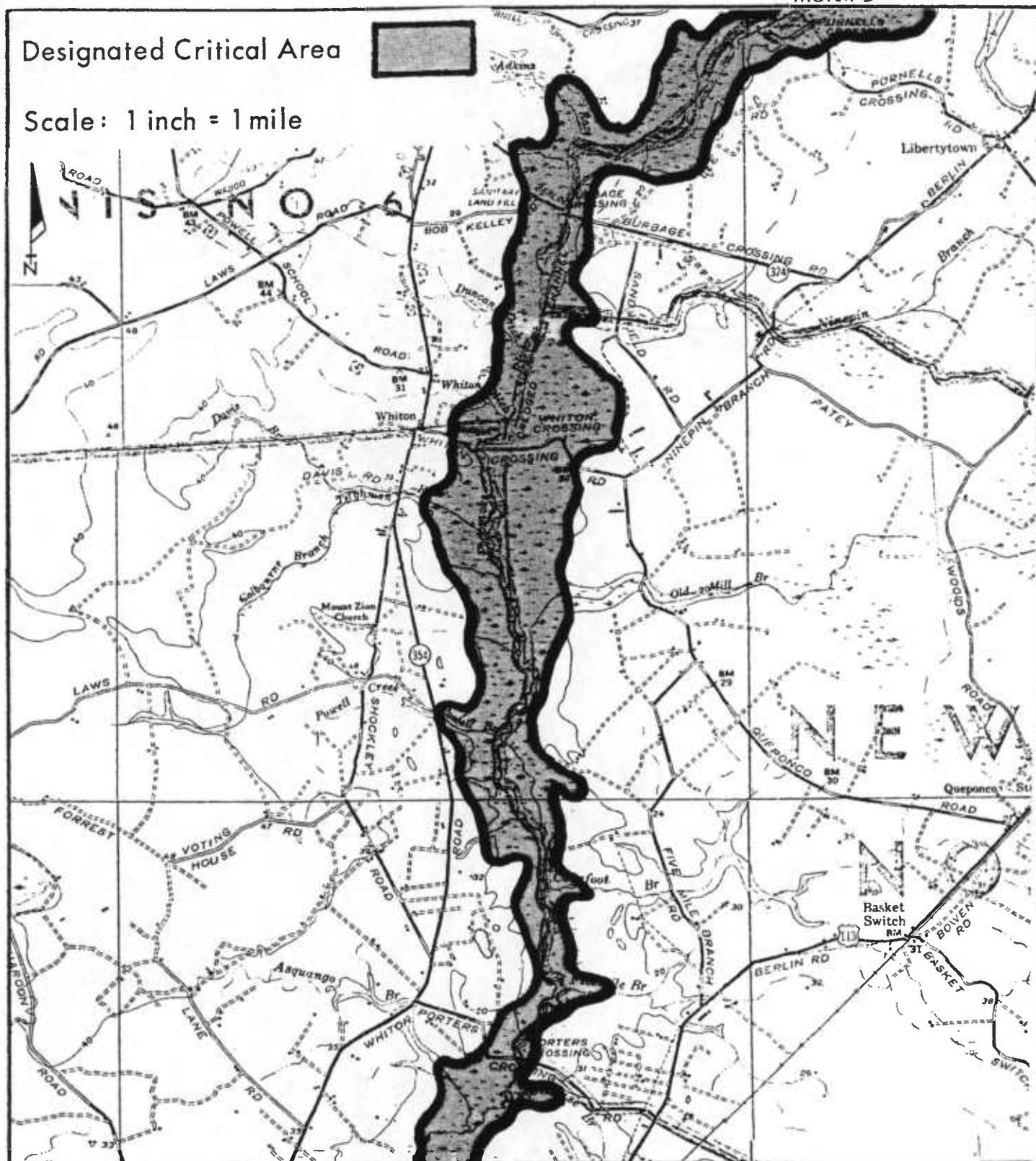
Acreage 18,700

Date Designated JAN. 1981

Match D

Designated Critical Area

Scale: 1 inch = 1 mile



Match C

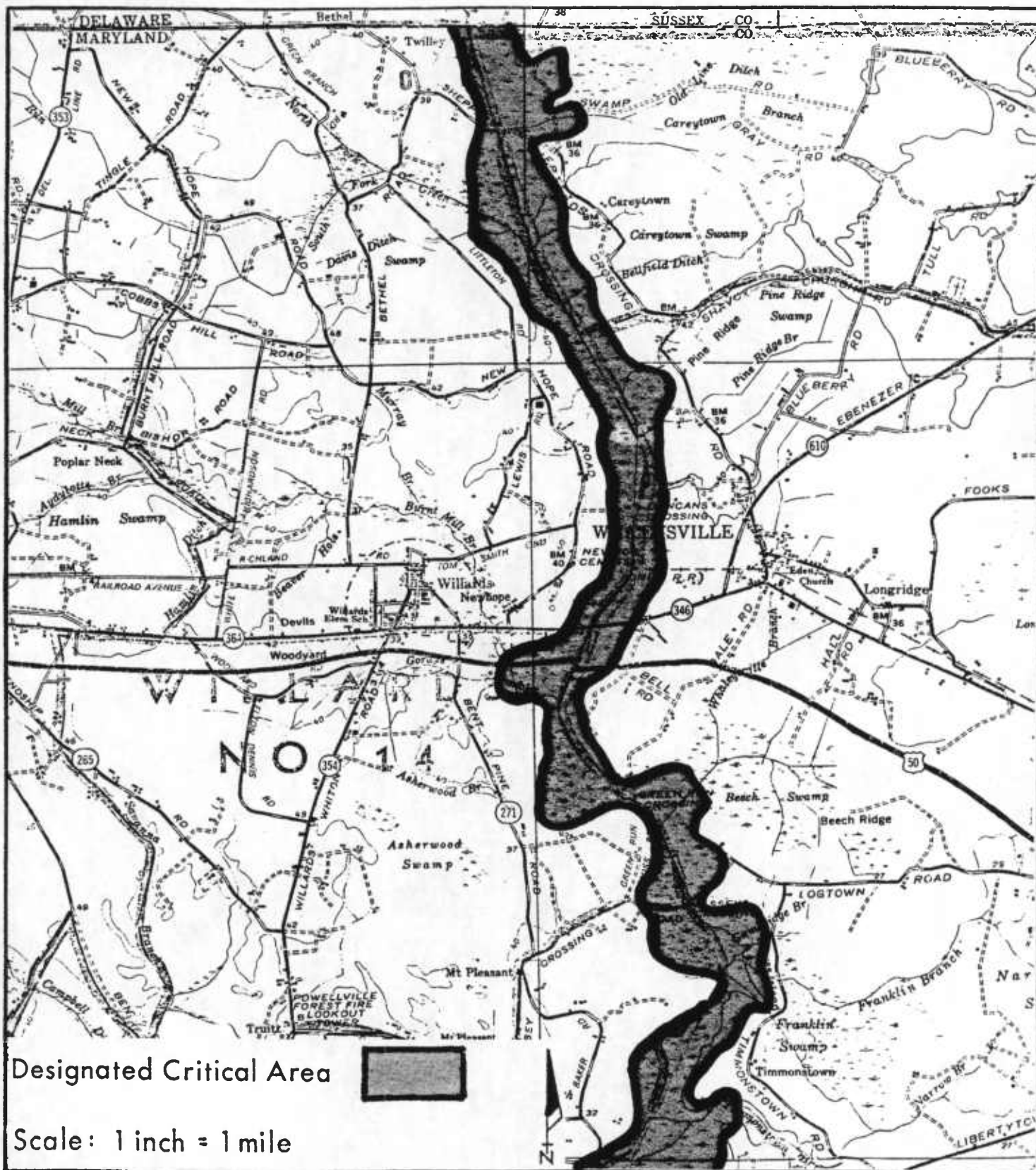
AREAS OF CRITICAL STATE CONCERN

Site Name POCOMOKE RIVER - SA1, TN14

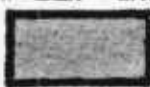
County SOMERSET, WORCESTER & WICOMICO

Acreage 18,700

Date Designated JAN. 1981



Designated Critical Area



Scale: 1 inch = 1 mile

SALISBURY PALEOCHANNEL

CLASS: Special Area

SITE NUMBER: SA 2

LOCATION:

The known limits of the Paleochannel generally extend from northwestern Wicomico County in the vicinity of Mardela Springs in an east-southeastward direction to an area two miles northeast of the City of Salisbury in the vicinity of U. S. Route 13 and Naylor Mill Road. A portion of the channel also extends northward along U. S. Route 13 for approximately 2½ miles.

AREA DESCRIPTION:

The Salisbury Paleochannel is an ancient, buried river channel which represents one of the most potentially prolific sources of ground water in the Atlantic Coastal Plain. This relatively untapped aquifer was discovered in 1963 by investigators from the U. S. Geological Survey and the Maryland Geological Survey during a cooperative study of the water resources of the Salisbury area. Basically, the Paleochannel is a thick, trough-like accumulation of water-saturated sand and gravel that was deposited by an ancient river over 100,000 to 130,000 years ago. The known length of the channel measures more than 20 miles and ranges in depth from 80 to 200 feet below ground level. The width of this aquifer varies from one to two miles in the western and northwestern portions of Wicomico County to one-third of a mile where it crosses branches of the Wicomico River north of Johnson's Pond.

The deposits of the channel offer up to twice the drawdown available in adjacent deposits outside the channel, therefore, requiring fewer wells to

yield equal quantities of water. A test well, constructed in 1972 to evaluate the groundwater potential, produced water at a rate of 4,000 gallons per minute or approximately 5 million gallons per day. The chemical quality of the water is satisfactory for most uses with little or no treatment. On the basis of the results of this testing program, the City of Salisbury established a new well and water treatment facility along the south side of Naylor Mill Road which roughly doubled the City's water supply capabilities.

The land area above the Paleochannel is marked by a variety of uses from urban development near Salisbury to agriculture and forests in the rural portions of Wicomico County. In addition to considerable active farmland, there is commercial, utility, industrial, and residential development at varying densities and of several types. The area is crossed by major highways and railroads.

OWNERSHIP PATTERNS:

The land area above the Paleochannel is in multiple private and public ownership. There are a few major parcels held by the owners of the Northwood Industrial Park, a public utility, the City of Salisbury and Wicomico County. For the most part, however, the area is owned by a large number of individual land holders.

CURRENT PLANS AND ZONING:

A relatively small portion of the total "known limits" lies within the corporate limits of the City of Salisbury and is currently zoned Light Industrial and Industrial Park. The majority of the land within the designated boundaries of the Paleochannel lies in the rural areas of Wicomico County between Salisbury and Vienna and is zoned Agricultural-Rural-Residential. In addition, there are a number of different zoning categories in the areas of the County immediately adjacent to the corporate limits of Salisbury and along the U. S. Route 13 Corridor to the vicinity of the Town of Delmar including: Commercial, Industrial, Light Industrial, Institutional, and Select Industrial, Residential (R-20), and Residential (R-15). Most of these

zoning categories require administrative review through a Special Exception procedure for commercial and industrial development. There are no special zoning provisions to protect the Paleochannel from incompatible land uses in either the City or County zoning ordinances.

The City of Salisbury provides water and sewerage service to the areas within the Industrial Park District. The Wicomico County Comprehensive Water and Sewerage Plan indicates that the remainder of the area within the corporate limits is currently served by existing systems or planned to be served by the extension of existing systems. The commercially zoned area along U. S. Route 13 to the Naylor Mill Road area is designated in the County Water and Sewerage Plan to be given immediate priority for provision of new water and sewerage systems. The majority of the area within the "known limits" of the Paleochannel aquifer is in the rural portion of Wicomico County and is not planned to receive service within the 10-year period.

CONTINUING PLANNING AND STUDIES:

The course of the Paleochannel beyond its known limits is currently being investigated by the Maryland Geological Survey. This investigation into the hydrology of the Paleochannel aquifer was initiated in July, 1979 through the cooperation of the Maryland Geological Survey, the Tidewater Administration of the Department of Natural Resources, and the U. S. Geological Survey. The purpose of this study effort is to provide data on the distribution and production capacity of the Paleochannel and related aquifers and also to determine whether the Paleochannel has been affected by any ground level contamination. A peninsula-wide definition of this water resource is essential for future planning to meet the industrial, municipal and agricultural water supply needs of the Delmarva area and to protect it from contamination.

THREATS/PROBLEMS:

Since the Salisbury Paleochannel is one of the most productive sources of groundwater in the Atlantic Coastal Plain, it is essential to carefully protect as well as prudently develop this critical resource. The quality

and quantity of the water resources of the Paleochannel are threatened by potential contamination and overuse.

Due to its inherent characteristics and location, the Paleochannel is a fragile underground resource which is highly susceptible to contamination. In many areas, the aquifer lacks a protective, confining layer or soil and its recharge areas are unknown. Thus, present as well as potential leachate pollution sources, such as sanitary landfills, dredged material disposal sites, fly ash disposal or storage sites and sewerage lagoons must be carefully monitored or guarded against. Any long term seepage or any type of major spill of hazardous substances could result in the wide-spread contamination of this valuable water supply.

A potential leachate pollution source, which requires special attention, although it appears to be located just outside the "known limits" of the Paleochannel aquifer, is the Blackwater Sanitary Landfill. This landfill, which is located in an abandoned borrow pit adjacent to the Delaware State Line on Waller Road, is the second most heavily used solid waste disposal area in Wicomico County and includes a large trench area for septic waste disposal.

Another potential contamination problem is the possibility of saltwater intrusion. According to a U. S. Congressional study of water resources of the Delmarva Peninsula, the Paleochannel is particularly vulnerable in areas adjacent to the brackish waters of the Choptank and Nanticoke Rivers. Detailed investigations are needed in these areas to determine allowable pumpage and well spacings in order to reduce the replacement of fresh water pumped from the aquifer by saltwater.

Although the Salisbury Paleochannel has the potential to meet the future water demands of Wicomico County and other communities, the overdevelopment of this aquifer could have a serious effect on its future public use. The most significant users of the water resources of the Paleochannel aquifer, other than the City of Salisbury, are the existing Delmarva Power Company Southern Division Headquarters, and the agricultural industry. In 1977

during peak usage, it was estimated that over 26 million gallons per day were drawn from stream and groundwater sources for irrigation use by farms in the six Lower Eastern Shore counties. Predictions indicate that this amount will increase in the future as farmers employ intensive farming methods which use large amounts of water. Although current rates of withdrawal and existing land uses have not yet apparently reduced the quantity or affected the quality of water in the aquifer, it is essential to carefully monitor the water demands to assure that the water supply capabilities of the aquifer are not exceeded.

MANAGEMENT:

The management of the area above the known limits of the Paleochannel aquifer involves the State of Maryland, Wicomico County, and the City of Salisbury. There is a need for a stronger comprehensive and coordinated development plan which reflects the importance of the Paleochannel.

Special zoning provisions should be prepared and incorporated in the City of Salisbury's Zoning Ordinance and the Wicomico County Zoning Code to protect the Paleochannel from contamination by the location of incompatible land uses in the area above its known limits.

There is need for a coordinated water resource management system to prevent the over-appropriation of water from the Paleochannel aquifer. A comprehensive monitoring system is needed to provide data regarding the collective withdrawals from the aquifer and permit the evaluation of each proposed use as to its potential impact on the aquifer.

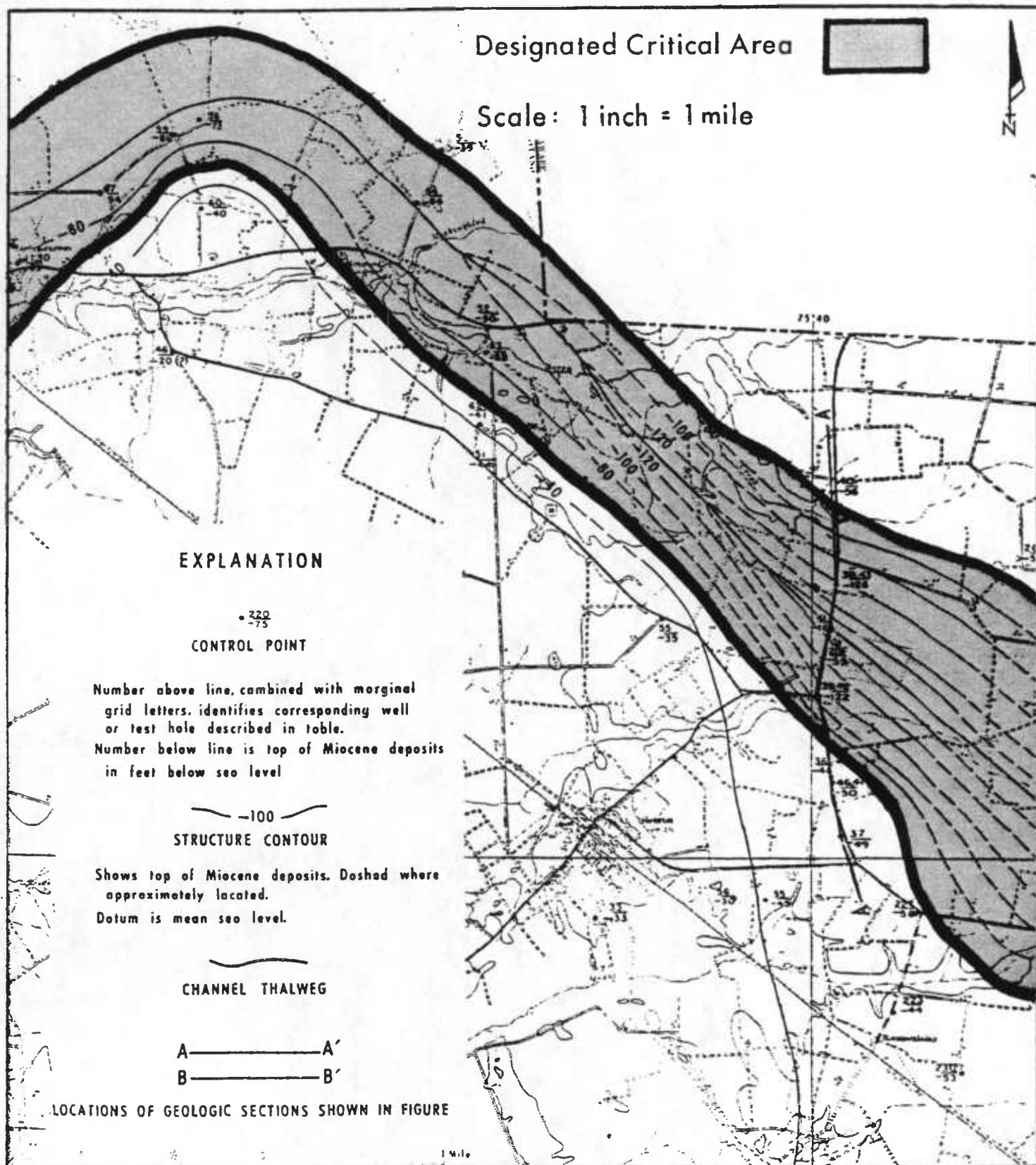
This designation relates to the current "known limits" of the Paleochannel. As research and exploration permit the further delineation of the remainder of the Paleochannel and greater understanding of the hydrology, capabilities, and limitations of the Paleochannel, the Critical Area designation will be revised.

Local governmental jurisdictions should be notified of applications pending before State agencies that may affect the Paleochannel prior to taking action on or approving such applications.

AREAS OF CRITICAL STATE CONCERN

Site Name SALISBURY PALEOCHANNEL - SA2

County WICOMICO Acreage 15,000 Date Designated JAN.1981



AREAS OF CRITICAL STATE CONCERN

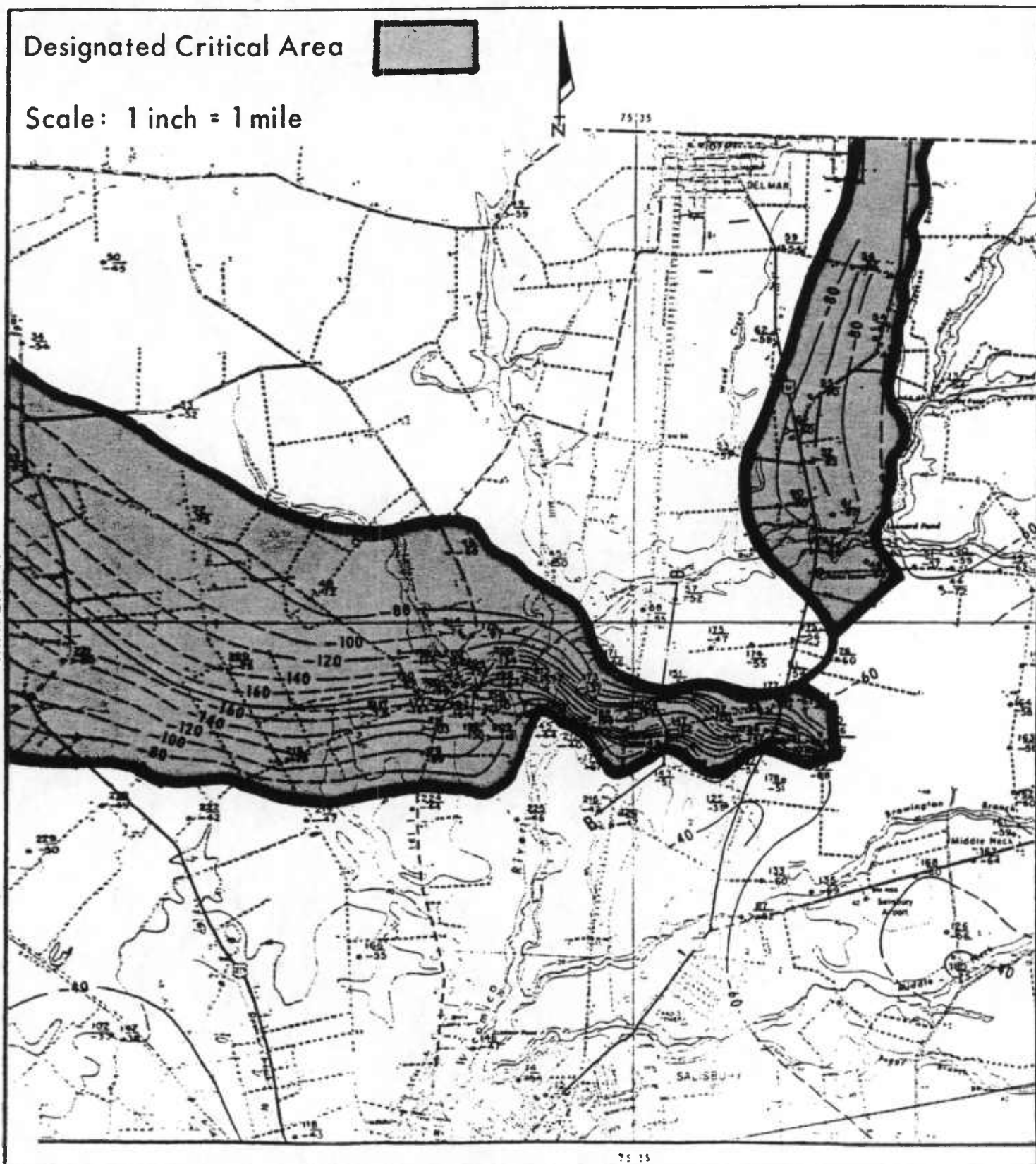
Site Name SALISBURY PALEOCHANNEL - SA2

County WICOMICO Acreage 15,000 Date Designated JAN.1981

Designated Critical Area



Scale: 1 inch = 1 mile



Appendix A

APPENDIX A: WETLANDS MANAGEMENT PROGRAMS
INVENTORY AND DESCRIPTION

I. STATE PROGRAMS

State management of designated tidal and non-tidal wetlands will depend on existing statutes and regulations to control potential direct and indirect impacts. The State's management of wetlands takes the form of planning, standard setting, regulation and enforcement, grant and capital programming, technical assistance, and intergovernmental cooperation. The various legal authorities discussed below are organized by major program subjects. They are summarized in Table 1, in Chapter One of the Designation Report. The major program areas include: A. Wetlands Management; B. Watershed and Flood Control Management; C. Water Quality and Water Supply Management; D. Solid and Hazardous Waste Management; E. Air Quality and Noise Control Management; F. Fisheries and Wildlife Management; G. Recreation, Open Space and Heritage Conservation; H. Coastal Zone Management; I. Research; J. Intergovernmental Coordination; K. State Planning; and L. Miscellaneous.

A. Program: WETLANDS MANAGEMENT

Agency: Department of Natural Resources: Water Resources Administration

1. Tidal Wetlands: The State's Tidal Wetland's Act of 1970 established the State policy to preserve its tidal wetlands and to prevent their despoilation and destruction. To carry out this policy, the Act divided the State's wetlands into two types -- State wetlands and private wetlands -- and presented a management program for each. State wetlands are defined as "all land under the navigable waters of the State below the mean high tide, which is affected by regular rise and fall of the tide." Private wetlands are "all lands not considered State wetlands bordering on or lying beneath tidal waters, which are subject to regular or periodic tidal action and which support aquatic growth." The Act makes it unlawful to dredge or fill on State wetlands unless a license to do so has been issued by the State Board of Public Works. The Board bases its decision on recommendations from the Wetlands Permit Division of the Water Resources Administration. Regulation of activities in private wetlands is achieved through a permit system of the Wetlands Permit Division.

2. Chesapeake Bay Dredging: This provision prohibits overboard disposal of dredged soil from Baltimore Harbor anywhere but within Baltimore Harbor, to prevent contamination of the cleaner portions of the Bay.
3. Non-Tidal Wetlands: The State does not have a specific program to regulate non-tidal wetlands, although certain State programs provide reasonably effective tools for managing these areas, particularly the approximately 90 percent of non-tidal wetlands that are in the floodplain. These programs are discussed in the next Section, "Watershed and Flood Control Management."

B. Program: WATERSHED AND FLOOD CONTROL MANAGEMENT

Agency: Department of Natural Resources: Water Resources Administration

1. Waters of the State Definition: These regulations, under this program are predicated upon the definition of "Waters of the State," as follows:

Surface and underground waters within the boundaries of the State subject to its jurisdiction, including that portion of the Atlantic Ocean within the boundaries of the State, the Chesapeake Bay and its tributaries, and all ponds, lakes, rivers, streams, public ditches, tax ditches, and public drainage systems within the State, other than those designed and used to collect, convey, or dispose of sanitary sewage. The floodplain of free-flowing waters determined by the Department on the basis of the 100-year flood frequency is included as waters of the State.

2. Waterway Construction and Obstruction Permits: These permits provide the most effective resource management and regulation vehicle presently available to protect non-tidal wetlands. There are several elements to the program as authorized under the law: 1) A Waterway Construction Permit is required before construction can begin in or along a non-tidal stream or before any construction may take place that changes the course, current or cross-section of that stream or its 100-year floodplain; 2) A Waterway Obstruction Permit is required before construction can begin on dams, reservoirs, or small ponds except as the latter is exempted as noted below. There are two circumstances, however, where the preceding permit authorities are not applicable to non-tidal wetlands:

1. If the non-tidal wetland is not within the 100-year floodplain, requirements for a State Waterway Construction or Obstruction Permit cannot be applied under existing statutory authority of Natural Resources Article §8-808.
2. Rules and regulations governing construction in non-tidal waters and floodplains currently exempt agricultural drainage systems affecting the course, current or cross-section of waters of the State having 400 acres or less of upstream drainage area; and activities affecting trout streams with less than 100 acres of upstream drainage area.

3. Flood Control and Watershed Management Act and Grant Program: Requires the Water Resources Administration to designate flood hazard areas. Local governments must prepare comprehensive watershed management plans with the purpose of regulating flood hazard areas and otherwise managing stormwater. The State must approve these plans where they are for interjurisdictional watersheds or where a jurisdiction wishes to apply for a State grant for program implementation. The State may authorize bond funds to provide grants of up to 50 percent of the cost of a capital project to help implement these plans. The watershed plans should include provision for protecting and properly managing wetlands.
4. Sediment Control Program: Control of sedimentation is one of the most significant wetland protection measures. The State approves and periodically reviews the sediment control programs used by counties in cooperation with soil conservation districts and oversees sediment control in State projects. The counties, in concert with local soil conservation districts, must issue permits before any land clearing construction, or development may begin. Agricultural activities are exempted from this program, however. There are special sediment control laws for the Patuxent and Severn Rivers.
5. Mining Permits: The Department of Natural Resources regulates surface and deep mining of coal and surface mining of other mineral resources in order to minimize environmental impact. Since commercial deposits, particularly of non-coal minerals, are likely to be situated in or near wetland sites, this State program is important to the protection of wetlands when mining actions are proposed in or near them.
6. Small Watershed Program: This is principally a Federal planning and construction program administered by the U.S. Department of Agriculture. While reference to it under State law is limited to cost-sharing authorization, the State and local governments participate extensively in the planning phases of a project, and federally qualified projects cannot be built without non-federal participation. The program has potential to both greatly benefit and greatly damage wetlands. The program may assist farmers to install soil conservation measures thereby reducing erosion. The program can also result in the construction of channelization projects for draining wetlands for agricultural use, as well as the construction of dams, levees and other works for flood control, water supply or various other purposes.
7. Flood Insurance Program: This is also a Federal program that is coordinated by the State. In order for individuals in communities to qualify for Federally subsidized flood insurance, the community must adopt appropriate land use controls for the 100-year flood plain. The program is somewhat, but not entirely, effective in limiting inappropriate development in flood plains, which include all tidal wetlands and about 90 percent of non-tidal wetlands. To the extent this program achieves its purposes, it contributes to the protection of wetlands.
8. Erosion Control Program: The State Erosion Control Program provides interest free loans to individuals or local governments to construct measures to prevent or reduce erosion. The program has only been used

for tidal erosion areas. As with the small watershed program, the impact of erosion control activities can either benefit or damage wetlands depending on how and where measures are constructed.

C. Program: WATER QUALITY AND WATER SUPPLY MANAGEMENT:

Agencies: Department of Health and Mental Hygiene: Office of Environmental Programs, Local Health Offices; Department of Natural Resources: Water Resources Administration, Maryland Environmental Services

1. County Water and Sewerage Plans: All counties are required to develop a county plan demonstrating how present and anticipated water supply and sewerage needs can best be met in a manner consistent with the use and enhancement of Maryland's water quality.

A major plan objective is to guide Maryland's water supply-sewerage system development in a manner consistent with and supportive of State and local growth patterns and development objectives. No community water supply or sewerage treatment system or individual water supply or sewerage treatment system may be expanded unless these facilities are in accord with the county plan, and unless there is adequate system capacity to handle the expansion.

These plans are extremely important in that they show the staging of expansion of sewage treatment and water supply systems, without which intensive development cannot occur. They are useful for estimating land use changes in or near wetlands.

2. Discharge Permits: It is illegal for any person to discharge any pollutant into Maryland's waters without a Discharge Permit from the Department of Health and Mental Hygiene. The Department has authority to promulgate water quality standards which are enforced, in part, through the issuance of discharge permits.

Maryland's discharge permit program has been approved pursuant to the provisions of the Federal Clean Water Act and the Federal permit program has been delegated to the State to administer.

3. Sewerage Construction Grants Program: The State provides grants to local governments to assist in paying the construction cost of sewage conveyance and treatment systems. Grants are normally awarded to supplement a 75 percent Federal grant, with the State paying up to one half of the non-Federal share in most cases. This is an important element in the water quality program, since most local governments could not afford the cost of adequate sewerage systems without these grants. The State has also been delegated the authority to administer most elements of the Federal sewerage construction grants program. The Federal program has extensive prerequisite planning requirements to determine the most cost-effective solutions to sewerage and water quality problems.

The State has a related program known as the "Failing Septic Tank Grant Program." Limited State bond funds have been authorized for grants to

jurisdictions to construct sewerage facilities to remedy health hazard situations in areas which might not be eligible for Federal grants.

4. Water Quality Management Planning: The State has a comprehensive water quality management planning program based on State law and integrated with various Federal requirements. This program carries out the research and planning which guides the implementation of programs such as discharge permits, construction grants, and non-point source pollution control.
5. Community Sewerage, Water and Storm Drain Facilities Permits: A permit is required from the Department of Health and Mental Hygiene before any person may construct, install, modify, or operate any industrial, commercial, or recreational facility or disposal system. This helps to assure that collection and treatment systems are properly designed.
6. Individual Water and Sewerage System and Subdivision Permits: The Department of Health and Mental Hygiene has promulgated regulations which set standards on design and placement of individual (i.e., single home) water and sewerage systems. The regulations contain criteria relating to soil, type, lot size, and distance from waters used for drinking, contact recreation, or shellfish growing. In addition, all applications for the subdivision of land where individual systems will be used are reviewed by the local health offices. Lots which cannot meet standards for individual systems are not approved for development. This program is an important element in maintaining overall water quality in the State. It may help to prevent development encroachment in or near wetlands.
7. State Operation of Water and Sewerage Systems: The Maryland Environmental Service is a State agency with the authority to plan for, operate, fund, and own water and waste facilities of various types for the State or for other public or private clients. While no different from any other entity in terms of its responsibility for proper operation of facilities, it also serves as a functionary in the State's water quality regulatory program. The Department of Natural Resources or the Department of Health and Mental Hygiene can order the Maryland Environmental Service to take over operation of facilities where extreme measures are called for due to serious and chronic violations.
8. Ground and Surface Water Appropriations Permits and Well Drilling: The use of "Waters of the State" with the exception of individual domestic or farm purposes, requires a State permit. Large withdrawals of ground or surface water can adversely affect wetlands in various ways. The permit process affords an opportunity to assess any such impacts.
9. Watershed and Flood Control Programs: These programs were described previously in subsection "B." They can contribute significantly to the protection of water quality in that sediment, in itself, is a pollutant; more importantly, most of the pollutants from non-point sources attach themselves to sediments and sediments act as the carrier to wetlands and water bodies. To the degree that watershed management and sediment control strategies succeed, a major source of pollutants can be reduced.

10. Oil Handlers Permit and Emergency Response Program: The Department of Natural Resources has general authority to formulate pollution regulations concerning oil storage, transfer, separation, removal, treatment and disposal. In addition, oil discharges into State waters from any vessel or boat are prohibited outright. The Coastal Facilities Review Act (see subsection "L") regulates by permit, facilities for handling processing, storing and equipment fabrication relating to oil.

A fund created from permit fees supports the purchase of equipment and a program for emergency response to spills.

11. Sewerage and Water Treatment Plant Operators Training Certification and Sanitarian Training: The expensive capital construction and regulatory programs for water quality are only as good as the people who operate or regulate them. These training programs should receive continuing support as an important element in the State's water quality program..
12. Watercraft and Marina Pollution Control: Waste disposal from marine craft is regulated by the Department of Health and Mental Hygiene with guidance and enforcement from the U. S. Coast Guard, the Maryland Natural Resources Police and the Environmental Protection Agency. Overboard disposal of sanitary wastes is prohibited. Such disposal can be a problem in marina areas and in upper tributaries where there is a low flushing rate. Marinas are being encouraged to install adequate pump out facilities.
13. General Health Powers: The Secretary of Health is generally empowered to regulate any activity related to protection of public health and to request an injunction against any activity causing a threat to public health.

D. Program: SOLID AND HAZARDOUS WASTE MANAGEMENT

Agencies: Department of Health and Mental Hygiene: Office of Environmental Programs; Department of Natural Resources: Maryland Environmental Service

1. County Solid Waste Plans: All counties are required to prepare and maintain a county plan demonstrating how present and anticipated solid waste needs can best be met in a manner consistent with the use and enhancement of water quality, and with land use, population growth, and economic development plans and objectives. These plans should be prepared and amended as necessary to assure the protection of wetlands.
2. State Solid Waste Plan: A statewide plan for the safe management and disposal of solid wastes is mandated by Federal Law. This plan is being prepared based on the County Solid Waste Plans. The plan should assure the protection of wetlands from direct or indirect adverse impacts.
3. Designated Hazardous Substances Program: Hazardous substance transportation, storage and disposal is regulated by the Department of Health and Mental Hygiene through a permitting, licensing and certification program. This program can help to protect wetlands by preventing

impacts associated with the release of toxic and hazardous substances to the environment.

4. Hazardous Waste Facilities Siting Program: In order to facilitate the safe handling of toxic and hazardous wastes, it is necessary to have proper and adequate facilities to process or dispose of such wastes. This program authorized the State to set criteria for the siting of hazardous waste facilities and to develop an inventory of potential sites. It creates a Hazardous Waste Facilities Siting Board which can issue permits for sites, upon application, in lieu of local zoning and permitting processes, after careful study of impacts and local consultations. The board may also direct the Maryland Environmental Service to proceed with acquisition, development and operation of facilities.
5. Northeast Maryland Waste Disposal Authority: In 1980, the General Assembly authorized Baltimore City, and Baltimore, Harford and Anne Arundel Counties, together with the Maryland Environmental Service, to create a new public authority to manage solid waste on a regional basis.
6. Solid Waste Facility Permit: All systems for disposal of refuse and sewage sludge must obtain a permit from the Department of Health and Mental Hygiene prior to operation. The Department carries out a review to assure the engineering and environmental adequacy of the system and to assure consistency with the County and State Solid Waste Plans.
7. State Operation of Solid or Hazardous Waste Facilities: The Maryland Environmental Service is authorized to plan for, operate, fund, and own hazardous and solid waste and sludge facilities of various types for the State or other public or private clients. The Service is regulated by the State and Federal governments just as any other operator. MES may be ordered to operate a Hazardous Waste Facility by the Hazardous Waste Siting Board, or to take over a facility as part of a regulatory action by the Department of Health and Mental Hygiene or the Department of Natural Resources.
8. Litter Control and Used Oil Recycling: The State Boat Act prohibits the overboard disposal of refuse and litter and the Litter Control Law also prohibits littering or the storing of automobiles or other junk in a water course. Another statute created a "Resource Reduction Materials Recycling and Litter Control Advisory Board" which is to prepare a complete plan to address these issues. In addition, a used oil recycling program was created, administered by the Maryland Environmental Service, to encourage the proper handling of used oils. These programs, if strictly enforced, can protect both the aesthetic and environmental values of wetlands.
9. Pesticide Regulation and Labeling Act: The State Department of Agriculture has various authorities to regulate agricultural chemicals and fertilizers, including a regulatory program for the handling and application of all pesticides. Improper or excessive use of these materials can be damaging to wetlands. Strong management and enforcement of these programs can help to mitigate adverse impacts.

10. Governor's Council on Toxic Substances: This Council was created to advise the Secretary of the Department of Health and Mental Hygiene on all matters concerning toxic and carcinogenic substances. It is made up of representatives from State agencies, businesses, labor, the scientific community, and other public members.

E. Program: AIR QUALITY AND NOISE CONTROL MANAGEMENT

Agency: Department of Health and Mental Hygiene: Office of Environmental Programs

1. Air Quality Program: The Department of Health and Mental Hygiene requires permits for pollution emissions into the air, and carries out a planning program to map out how air quality standards can be met. Good air quality helps to preserve the aesthetic qualities of wetlands, and reduces the pollutants falling into the State's lands and waters. Vegetation may be directly damaged by certain constituents in air pollution. These programs help to mitigate these adverse impacts.
2. Noise Control Program: The Department of Health and Mental Hygiene has responsibility for establishing noise standards and promulgating regulations for their enforcement. Reduced noise levels can help to protect the aesthetic values of wetlands from nearby intensive land uses and from noise from navigation. Excessive noise can also disturb wildlife in wetland areas.

F. Program: FISHERIES AND WILDLIFE MANAGEMENT

Agencies: Department of Natural Resources: Tidewater Administration, Wildlife Administration, Capital Programs Administration

1. Fisheries Management Programs: The State has the authority to establish the boundaries for both the tidal and non-tidal waters of the State. The tidal fisheries program is under the State's Tidewater Administration, while the non-tidal fisheries program is under the Inland Fisheries Section of the Wildlife Administration. These two Administrations collectively inspect and regulate the waters of the State to enhance the fisheries resources. Direct and indirect impacts on tidal wetlands can thus be managed by the Tidewater Administration's Tidal Fisheries Division, while direct and indirect impacts on non-tidal wetlands can be managed by the Inland Fisheries Section of the Wildlife Administration.
2. Wildlife Management Programs: These programs are under the authority of the Wildlife Administration of the Department of Natural Resources, which is responsible for overall management and regulation of the State's numerous and varied wildlife resources. It administers the Migratory Bird Law and the Non-Game and Endangered Species Conservation Act. Since the tidal and non-tidal wetlands of the State are prime wildlife habitat areas, the State's overall Wildlife Management Programs have direct and indirect impact on the State's wetlands.
3. Forest Management Programs: These programs are under the authority of the Maryland Forest and Park Service, which is responsible

for promoting, administering, and managing every State-owned or leased forest, park, scenic preserve, natural area, parkway, historic monument, and recreation area. The Service also administers laws relating to fire control, roadside trees, reforestation, the State forest nurseries, the State's Forest Conservation and Management Program, establishment of Forestry Conservancy Districts, and Forest Protection of these State resources from inappropriate use. Since the wetlands of the State are closely related to the State's woodlands, Forest Management Programs directly and indirectly affect tidal and non-tidal wetlands of Maryland.

G. Program: RECREATION, OPEN SPACE, AND HERITAGE CONSERVATION PROGRAMS

Agencies: Department of Natural Resources: Capital Programs Administration, Maryland Environmental Trust, Maryland Geological Survey, Tidewater Administration, Maryland Forest and Park Service, Wildlife Administration; Department of Economic and Community Development: Maryland Historical Trust

1. Acquisition and Easement Programs: Program Open Space is a State program of sustained financial support which provides funding for acquisition and development of open spaces and recreational areas for Maryland citizens. The Program is administered by the Department of Natural Resources. It is financed through a 0.5 percent real estate transfer tax, which provides funds for State and local recreation and open space areas. The State portion of the Program funds acquisition of State Parks, State Forests, Natural Environmental Areas, Natural Resources Management Areas, Wildlife Management Areas, Fish Management Areas, and State Wildlands. The Program provides financial support for the purchase of Agricultural Land Easements, which are administered by the Maryland Agricultural Land Preservation Foundation. Program Open Space funds may also be used for acquisition or easements for historic preservation when part of an overall recreation area. In addition, the Maryland Environmental Trust accepts easement donations under the State's Conservation Easement Program. The local portion of Program Open Space may be used to acquire and develop recreation and open space lands and facilities, agricultural, conservation, or historical easements, environmental education facilities, and resource protection areas. Program Open Space is supplemented by federal Land and Water Conservation Funds, administered by the U.S. Heritage Conservation and Recreation Service. Program Open Space thus represents a large program which contributes to the protection of the State's wetlands by various methods of fee acquisition or easement purchase. Since Program Open Space funds the local development of recreation facilities, and since the State develops recreation facilities from the Capital Budget, care must be taken in these programs that recreation facilities developed in or near wetlands are compatible with their environment and if possible, enhance these unique resources. The Maryland Historical Trust receives additional money for historical acquisition and easement purchase of historical land, from grants administered by the U.S. Heritage Conservation and Recreation Service. While the Agricultural Land Preservation Foundation Program receives major financial support from Program Open Space, this program is also funded by the State Development Tax, as well as being supplemented by local funds. The Development Tax is levied on farmland as of

July 1, 1979, on agriculturally assessed land when the farmland is subsequently developed. This tax causes owners of agricultural land to repay taxes lost as a result of the preferential agricultural assessment. Acquisition or easement purchase by use of these various funding programs for purposes of recreation areas, open space conservation, and preservation of our cultural heritage, can serve as important methods of directly or indirectly protecting the tidal and non-tidal wetlands of the State.

2. Agricultural Land Assessment Program: This program assesses for taxing purposes, agricultural land at its existing use value rather than its highest use potential value. This helps enable the existing agricultural lands of the State to remain as viable farms, thus helping to protect and preserve those agricultural lands. The protection of the agricultural lands of the State aids in the protection of wetlands by helping to manage and direct urban development and its related impacts on tidal and non-tidal wetlands.
3. Historic Preservation Districts: Under provision of Article 66B, the local jurisdictions within the State have the power to establish Historic Preservation Districts for the purpose of protecting and enhancing the historical or architectural values of an area. New structures or altering existing structures (and land forms) within the district must conform with the historical and aesthetic characteristics of the area. Historical zoning thus has the ability to control development and enhance environmental characteristics which have impacts on tidal and non-tidal wetlands.
4. Maryland Scenic and Wild Rivers Program: This program is administered by the Department of Natural Resources. It provides for the planning and subsequent management of the legislatively designated Scenic and Wild Rivers. The ultimate protection of these resources, by use of a wide range of existing land use management techniques, serves to protect the tidal and non-tidal wetlands associated with these rivers. Wetlands within the boundaries of a Scenic or Wild River are directly affected by the management techniques developed within the Scenic and Wild River Plan. Wetlands which may be downstream from such areas are indirectly protected by the improved management of the upstream watershed areas.
5. Archeological Resource Law: This is administered by the Maryland Geological Survey which requires permits to be issued before disturbing archeological sites and requires archeological surveys to be performed on State land before beginning any proposed alterations of the area. Archeological sites in either the tidal or non-tidal wetlands of the State thus have the added protection of this permitting process. Since there are numerous known archeological sites in the State's wetlands, this program can have a significant impact on controlling various environmental impacts.
6. Waterway Improvement Fund: This is administered by the Tidewater Administration of the Department of Natural Resources. This fund is based upon revenues collected from the State's Boating Titling Tax and is used exclusively to improve the public use of the State's waterways. Since wetlands are an integral part of these waterways, this program can be utilized to control impacts on wetlands.

H. Program: COASTAL ZONE MANAGEMENT

Agency: Department of Natural Resources: Tidewater Administration

This program is carried out based on the program approved by the Federal Government in 1978. The Coastal Zone Management Program document spells out policies and inventories programs for managing the State's coastal resources. The wetlands designated Areas of Critical State Concern fulfill a part of Coastal Zone Management Programs' commitment to utilize the Department of State Planning's Critical Area Program to implement the Coastal Zone Geographic Areas of Particular Concern effort. These designated areas will be managed in accord with the applicable policies and procedures of Maryland's Coastal Zone Management Program.

I. Program: RESEARCH AND EDUCATION

1. University of Maryland Center for Estuarine and Environmental Studies: The Center is charged with conducting "a comprehensive program to develop and apply predictive ecology for Maryland to the improvement and preservation of the physical environment, through a program of research, public service, and education." In cooperation with other academic institutions around the Bay (Johns Hopkins University, Virginia Institute of Marine Science, Smithsonian Institution), the Center provides much of the research capability related to wetlands ecology in the area. The Chesapeake Research Consortium is a coordination and secretariat for projects involving more than one of the above mentioned institutions.
2. Environmental Protection Agency Chesapeake Bay Program: This multi-year, multi-million dollar research effort is focusing on management of Submerged Aquatic Vegetation, Impact of Toxic Substances, Impact of Nutrients and Institutional Management. The findings, if applied through new or existing management programs, will do much to help protect wetlands.
3. Sea Grant Program: This Federal grant research program is being carried out through the University of Maryland. Research is focusing on oyster propagation.
4. Maryland Geologic Survey: The Survey carries out basic geologic and hydrologic research. The resulting information and maps provide basic information for the proper management of wetlands.
5. Chesapeake Bay Research and Coordination Act of 1980: This law was recently enacted setting up a Commission of Bay researchers and managers to help coordinate Bay research and to focus research on management needs.

J. Program: INTERGOVERNMENTAL COORDINATION

1. Susquehanna River Basin Commission: This Federal/State Compact Commission has jurisdiction over the Bay's largest tributary. The quality and quantity of the water from the Susquehanna has a great influence on the characteristics of the Chesapeake Bay water, particularly the upper Bay. The Commission has been effective in assuring the protection of the Chesapeake Bay through encouragement of proper management of activities in the Basin that may adversely impact the Bay and its wetlands.
2. Bi-State Working Group on Chesapeake Bay: Through an agreement between the Governors of Maryland and Virginia, agencies in both States have begun working together on a series of issues which affect the Chesapeake Bay and its wetlands. This group can play a role in recognizing and helping to protect Critical Areas.
3. Chesapeake Bay Commission: This is a joint Commission representing the Maryland and Virginia Legislatures. They are working together toward improving institutional arrangements for management of the Chesapeake Bay.
4. Interstate Environmental Compact: A Federal law authorizes interstate agreements, without the usual specific Congressional authorization, for the purpose "of controlling interstate environmental pollution problems not inconsistent with applicable federal legislation."
5. Interstate Commission on the Potomac River Basin: This Commission is advisory to the State and Federal governments concerning water and related land resource issues in the Potomac River Basin. They carry out planning, research and informational and educational programs on Potomac Basin issues.
6. Potomac River Fisheries Commission: The Commission was formed to further the vital interest of Maryland and Virginia in "...conserving and improving the valuable fishery resources of the tidal river portion of the Potomac River." The Commission consists of six members, three from each state. The Commission has the authority to make regulations concerning the taking of fish and shellfish from the Potomac River, and to license fishermen and shellfish harvesters who use the river.
7. Atlantic States Marine Fisheries Commission: The purpose of the Atlantic States Marine Fisheries Compact is to "...promote the better utilization of the fisheries, marine, shell and anadromous, of the Atlantic seaboard by the development of a joint program for the promotion and protection of the fisheries industry, and by the prevention of the physical waste of fisheries."

K. Program: STATE PLANNING PROGRAMS

1. State Development Plan: A policy plan to guide the economic and physical development of the State is being prepared. Its preparation is being aided by a Development Council, created by the Governor by Executive Order. The Council is made up of the secretaries of six State departments and the Lt. Governor.

2. Areas of Critical State Concern Program: This is an element of the State Development Plan, which will take cognizance of designated critical areas and provide a framework of policies for the continuing Critical Areas Program. After careful analysis, the Secretary may designate areas whose values are important to the welfare of the citizens of the State.
 3. Intervention: The Department will, in accord with the Intervention Standards, intervene in administrative, judicial or other proceedings concerning land use, development or construction in order to gain proper management of Critical Areas.
 4. State Capital Program: The State Capital Programs will be planned and executed in a manner to avoid adverse impacts to designated Critical Areas.
 5. State Clearinghouse: All projects and programs reviewed through the State Clearinghouse will be reviewed for their consistency with the Critical Areas Program.
 6. Planning Coordination and Technical Assistance: The Department will use its authority for planning coordination and technical assistance to local governments, State agencies, and private landowners to help assure proper implementation of the Critical Areas Program.
- L. Program: MISCELLANEOUS
1. Coastal Facilities Review Act: The location of oil, natural gas, and OCS-related facilities in the State's coastal counties is regulated by the Coastal Facilities Review Act (CFRA), that is administered by DNR in conjunction with other State agencies and local units of government. Facilities covered under this Act include natural gas facilities, pipelines, intermediate oil production terminals or refineries, oil and gas storage facilities, operation bases, and fabrication yards. These facilities must receive certification from the Department of Natural Resources before construction may begin. The Secretary of Natural Resources is required to designate someone to draft an environmental, economic, and fiscal statement on the proposed facility, to be used to determine whether to issue the permit. The Secretary also receives advisory comments from the Secretaries of State Planning, Health and Mental Hygiene, Economic and Community Development, and Transportation.
 2. Power Plant Siting Program: This program is designed to assure appropriate siting of major electric power plants in the State. It is an interdepartmental program involving the Departments of Economic and Community Development, Health and Mental Hygiene, Agriculture, State Planning, and Transportation, with the Department of Natural Resources as lead agency. The law provides the authority for the State to assess the demand for power, acquire power plant sites, and review industry submitted sites.

3. Maryland Environmental Policy Act: This law includes a broad statement of State Environmental Policy as well as a requirement that impact statements be prepared for certain proposed State actions.
4. Transportation and Port Programs: The State Department of Transportation carries out planning and implementation programs for all transportation modes. Most of these programs have significant wetlands impact potentials as they require dredging and filling, crossing of water bodies, direct changes in land use, and influence land use through secondary impacts. These programs should be carried out with utmost sensitivity to the designated Critical Areas.
5. Economic Development Programs: These are inventoried in greater detail in Appendix B. As with transportation programs, these programs can have significant impact on wetlands and should be carried out in a manner sensitive to the needs of designated wetlands.
6. Environmental Education: A basic need for protection of wetlands, as for any environmental resource, is well informed citizenry. There are many programs operated by public and private agencies and institutions which contribute toward filling this need. Such programs should continue to be encouraged.
7. Tax Policy: Tax policy can significantly affect private owners' incentives to preserve wetlands and impact areas. Preferential assessments for agricultural and forest lands contribute toward maintaining open spaces and land uses compatible with wetland preservation.

II. LOCAL PROGRAMS

Three Articles of the Annotated Code of Maryland delegate basic power to local general purpose governments for planning and zoning. The power to enact measures to protect wetlands derives from these enabling Articles and various clarifying sub-sections which lend detail to the overall local planning and zoning authority.

A. Non-Charter Counties and Municipalities - Article 66B

Article 66B, Section 3.01 confers overall power to adopt a comprehensive plan guiding private and public actions to insure proper development of land within the subject jurisdictions. This, along with other sections (see below) implicitly allow use of police powers to protect wetland areas:

1. Section 3.05 - Requires that plans include land use elements specifying the most appropriate location of land uses and recommendations, identification, and designation of Areas of Critical State Concern.
2. Section 3.06 - Cites purposes of plan, among them being the "prevention of environmental pollution" and "conservation of natural resources."

Article 66B, Section 4.01 delegates the power to zone and the right to impose additional restrictions deemed appropriate to preserve, improve, or protect the general character of land being zoned or rezoned. Additionally, Section 4.03 specifies the purposes of zoning, among them being the prevention of environmental pollution and conservation of natural resources.

Article 66B, Section 5.03 confers upon local jurisdictions power to enact subdivision regulations which provide for the control of sedimentation and shore erosion and protection from flooding.

B. Charter Counties of Maryland - Article 25A

Article 25A, Section 5 enumerates the powers of charter counties. The following is a listing of those powers and responsibilities which are applicable to wetlands management:

1. Power to conduct planning and zoning activities.
2. Power to enact laws to control soil erosion and preserve natural topography.
3. Authority to finance, construct and regulate storm drainage facilities.
4. Authority to carry out, construct and operate projects and facilities for flood prevention or conservation in watershed qualifying for federal assistance.

C. The Maryland-National Capital Park and Planning Commission - Article 66D

This Article confers the authority to the Commission to conduct planning activities in Montgomery and Prince George's Counties. Several sub-sections grant specific powers to the Commission which could be used in preserving and managing wetlands. The following are examples:

1. Section 5-101 grants powers to acquire and maintain land for parks and open space.
2. Section 7-108 requires the Commission to adopt an overall plan and sector plans to guide development within the bi-county area.

In many instances, these sub-sections require that the jurisdictions' overall comprehensive plans address environmental concerns. They also empower these two jurisdictions to develop regulations to implement these plans. These implementing ordinances, generally zoning and subdivision regulations, specify uses allowed within and adjacent to wetlands, regulate sedimentation and promote many other measures utilized to preserve and manage wetlands.

D. Sanitary Districts and Commissions - Article 43, Sections 409-466

This portion of the Health Article authorizes local governments to create, delineate, fund and operate sanitary districts and commissions for the

purpose of protecting public health. Through these provisions, local governments derive powers relating to where, how and when sanitary facilities are provided. These powers have significant implications of the protection of water quality and wetlands.

E. General

The "Summary" of this document, starting on p. VIII, identifies actions local government can take using the local powers to manage wetland critical areas. The previous section on State programs indicates a specific local role in 26 of the State programs listed. In addition, the discussion of each designated area contains information on management needs and opportunities for each area, which can be best addressed with local programs.

The 26 State programs listed in Table 1 which have significant local components are listed below:

<u>Program</u>	<u>Table 1 Item</u>
1. Flood Control and Watershed Management Planning	B4
2. Sediment Control Program	B5
3. Small Watershed Program	B7
4. Federal Flood Insurance Program	B8
5. County Water and Sewerage Plans	C1
6. Sewerage Construction Grants Program	C3
7. Water Quality Management Planning	C4
8. Individual Water and Sewer System and Subdivision Permits	C6
9. State Operation of Water and Sewerage Facilities	C7
10. County Solid Waste Plans	D1
11. Hazardous Waste Facilities Siting Program	D4
12. Northeast Maryland Waste Disposal Authority	D5
13. Air Quality Program	E1
14. Noise Abatement Program	E2
15. Forest Conservation Management	F3
16. Program Open Space	G1
17. Maryland Agricultural Land Preservation Foundation	G1
18. Historic Preservation Districts	G3
19. Maryland Historical Trust	G3
20. Scenic and Wild Rivers Act	G4
21. Coastal Zone Management Program	H
22. Areas of Critical State Concern	K2
23. Intervention	K3
24. Coastal Facilities Review Act	L1
25. Power Plant Siting Program	L2
26. Environmental Education	L6

III. FEDERAL PROGRAMS

A. Direct Federal Actions

1. Federally Owned Lands

The Federal government owns significant amounts of land in Maryland, including major portions of coastal wetlands. In addition, there are major federal holdings inland which are in watersheds which drain into important wetlands. The federal agencies that operate on these lands can develop them without regard to State or local planning or regulatory constraints, although they must follow certain federal procedures, such as the National Environmental Policy Act. Procedures have been established for planning to take place with respect to these federal lands and for local and State consultation to occur in the course of that planning. The National Capital Planning Commission acts as planner and coordinator for Federal activities in the Washington, D.C. area. The State A-95 Clearinghouse coordinates the review of plans and Environmental Impact Statements for federal facilities throughout the State. The Coastal Zone Management Program requires findings of consistency with the State Coastal Zone Program for Federal action in the coastal areas.

2. Federal Programs and Policies

There are numerous direct federal programs and policy activities which can affect wetlands directly and indirectly. A partial listing of some important ones follows:

<u>Program</u>	<u>Agency</u>
Water Resources Policy	Water Resources Council
Environmental Policy	Council on Environmental Quality
Navigation Channel Maintenance	U.S. Army Corps of Engineers
Navigation Safety and Sanitation	U.S. Coast Guard
Emergency Response to Spills	Environmental Protection Agency, U.S. Coast Guard
Scientific Research	Library of Congress, Environmental Protection Agency, Interior, Smithsonian, Office of Technology Assessment, National Research Foundation, Water Resources Council
Budgeting, Resource Allocation	Office of Management and Budget
Program Coordination	Office of Management and Budget, Water Resources Council
Flood Insurance Program	Department of Housing and Urban Development
Water Resources Project Planning and Construction	U.S. Army Corps of Engineers, Department of Agriculture

B. Federal-State-Local-Intergovernmental Programs

As noted in Table 1 in Chapter One, there are numerous federal programs which impact State programs in two principal ways.

First, there are federal program grants to states to carry out federal planning and program activities delegated to the states. These delegations often carry strong federal program direction through standard setting or performance standards. Major examples of these programs which affect wetlands include the Coastal Zone Management Program, Water Quality Management Planning and Program Grants, Resource Conservation and Recovery Act Program Grants, and the Environmental Protection Agency's Chesapeake Bay Program.

Second, federal grants for program implementation or construction which may go to states directly, through states to local government, or to local governments directly, all provide strong incentives for fulfilling federal program objectives as related to wetlands management. Major examples of this type include the Sewerage Construction Grant Program and the Land and Water Conservation Fund.

IV. PRIVATE MANAGEMENT

1. Private Property Owners

Many of the designated wetland critical areas are privately owned. This means that their proper management is in the hands of individuals. Cooperation by private property owners, whether they own land in a designated area, or in a watershed that can impact a designated area is vital to the success of the Critical Areas Program. Private owners must be informed of the status and values of the designated areas they own or may impact. Since designation carries no legal changes in the rights or responsibilities of land ownership, proper management depends upon the informed voluntary actions of private land owners.

2. Foundations/Conservancies

Private foundations and conservancies can and have played an important role in protecting and managing the Wetlands Critical Areas of the State. Their role ranges from indirect assistance such as funding assistance for wetland acquisition and/or management, to the direct acquisition and management of wetlands, which may be subsequently re-sold or given to State or local governments. Foundations and conservancies are based upon private donors and thus their activities have the advantage of creating public interest and awareness. Foundations and conservancies serve as a vital and necessary link between the various levels of government and the general public. Their diverse abilities to help protect the Wetland Critical Areas of the State should be continually integrated with all other management techniques.

Appendix B

APPENDIX B: PROTECTION AND ENHANCEMENT OF RAIL
SERVICE MANAGEMENT PROGRAMS, INVENTORY AND DESCRIPTION

I. INTRODUCTION

In order to effectively promote the use and viability of rail service, it will be necessary to utilize all the planning and funding programs available at all levels of government. There are numerous programs at the State level which can be applied to promote the growth and development of manufacturing and agricultural industries along the designated rail lines. Many of these programs are the responsibility of the Department of Economic and Community Development (DECD). The Department of Transportation also has very important programs which can be used in conjunction with DECD programs to support rail service. Local jurisdictions, both counties and municipalities, have planning and zoning authorities which can be utilized to promote rail service by directing development of a compatible and/or business generating nature along the critical rail lines. The Federal government has three funding programs which are applicable to promoting the economic viability of these rail lines.

This section summarizes each available program which can be applied by local jurisdictions and State agencies to implement the management policies of this critical area class. Each summary provides a description of the program, its objective, the type of assistance it provides, eligibility requirements and application procedures.

II. STATE PROGRAMS

A. Maryland Department of Economic and Community Development Programs

The Maryland Department of Economic and Community Development (DECD) currently operates a number of programs designed to facilitate the development and implementation of economic development plans, programs and projects. The Department acknowledges the importance of the preservation and improvement of rail lines to the support and promotion of local and regional commerce and provides many services that enable local jurisdictions and private enterprise to utilize the advantages of rail service. These services provide for industrial development, financial, and technical assistance.

Within the Department of Economic and Community Development, services that relate to the protection and enhancement of railroads are provided by the Division of Economic Development and the Division of Local and Regional Development.

The Division of Economic Development is responsible for programs designed to encourage business and industrial development. The Division includes the Office of Business and Industrial Development, the Office of Minority Business Enterprise, the Office of Business Liaison, and the Maryland Industrial Development Financing Authority. The Office of Business and Industrial Development administers the Maryland Industrial Land Act which provides loans to counties for development of industrial land and industrial parks. This office also administers the Maryland Industrial Training Program. Minority owned businesses may receive technical and management assistance for the establishment or expansion of business operations through the Office of Minority Business Enterprise. The Office of Business Liaison encourages and works with existing industry on expansion and relocation projects. Business and industrial loan insurance with tax-exempt interest rates is provided through the Maryland Industrial Development Financing Authority.

The Division of Local and Regional Development provides and coordinates technical and financial assistance to local governments and regional organizations to help them develop and implement economic development programs. The Division serves as State liaison, information clearing-house, and/or grants manager for a variety of federal development programs including those of the Economic Development Administration which includes special provisions for the installation of rail spurs at industrial sites. Currently, this division administers the Maryland Industrial and Commercial Redevelopment Fund.

This inventory of programs administered under the Department of Economic and Community Development covers a wide variety of economic services. Technical assistance ranges from program research, planning, and engineering studies to program administration. Loans and grants are available for an array of industrial needs including working capital, infrastructure, equipment, buildings, and the provision of private railroad spurs.

The inventory also illustrates the close linkage between rail services and industrial development and indicates how one can reinforce and strengthen the other.

A more detailed discussion of these programs is provided by the following program descriptions:

1. Division of Economic Development

Administering Agency: Department of Economic and Community Development
1748 Forest Drive
Annapolis, Maryland 21401

Authorizing Legislation

State: Article 41, Sec. 258-266 of the Annotated Code of Maryland

The Division of Economic Development is responsible for programs designed to encourage business and industrial development and optimize employment and income opportunities for Marylanders. The Division currently operates the following offices and programs:

a. Office of Business and Industrial Development

Program

This program provides assistance to businesses seeking to locate in Maryland or expand current Maryland operations; assists local governments and regional organizations to prepare reference and promotional publications; administers the Maryland Industrial Land Act to provide loans to counties for development of industrial land and industrial parks; conducts activities designed to encourage foreign owned corporations to establish operations in Maryland; provide comprehensive site selection services including available industrial sites and buildings, demographics, transportation, labor availability, wage rates, taxes, financing, education, and recreation; administers the Maryland Industrial Training Program which offers training and recruitment assistance to businesses that are just starting, relocating from other states, or undergoing major expansion.

Type of Assistance

Technical assistance and information.

Eligible Applicants or Recipients

Any organization formed to promote economic development or local unit of government may receive assistance.

Application Procedures

No formal application procedures. Information is available upon request.

The Office of Business and Industrial Development currently administers the following related programs:

(1) Maryland Industrial Land Act (MILA)

Objectives

To provide low cost loans to the counties and Baltimore City for acquisition and development of industrial properties in cases where private investment has not been available.

Program

The two major purposes of the program are to help counties preserve suitable land for future industrial growth, and to attract new business by providing industrial parks and "shell" buildings. To assist with the acquisition of industrial land including railroad property and rights-of-way loans can be made up to 100 percent of the value of the property, to maximum of \$750,000. Additional loans are available to facilitate industrial park planning and development. For these purposes, loans can be approved for up to 50 percent of the anticipated project costs, to a maximum of \$1,500,000 for one project. Project costs that are covered include:

1. Planning and engineering studies
2. Land acquisition
3. Water, sewer and other utility lines that are not provided by the utility
4. Access and internal roads
5. Street lighting
6. Installation of rail spurs that are not funded by the railroad
7. Specialized unique costs such as bulkheading, docks, and aircraft runways and aprons
8. Grading, clearing and after site preparation
9. Rehabilitation of existing buildings for either single or multi-tenant use
10. Demolition, in conjunction with new construction financed under MILA
11. A vertical industrial park (multi-tenant, primarily industrial building)

MILA law includes a section providing loans up to \$1,500,000 to construct or rehabilitate basic industrial structures on land controlled or owned by the county. Also included in MILA authorization is a provision for loans to 50 percent of the costs, up to \$50,000, for acquiring options to purchase prospective industrial land sites.

Eligible Applicants or Recipients

Baltimore City and counties of the State

Application Procedures

1. The county sends a letter of intent to the Secretary of DECD. The letter should include a description of the project and the name of the local official responsible for the project.
2. DECD staff and the responsible local official confer to review the information and pertinent regulations so that the application can be successfully completed. The application generally includes:
 - a. The identity of the applicant
 - b. A description of the property
 - c. The availability and inventory of utilities
 - d. An environmental impact statement by the responsible local officials regarding noise, water supply, water effluent, air quality and road congestion
 - e. An explanation of the suitability of the land for industry
 - f. A description of zoning and other relevant laws and regulations affecting the property, including what changes are planned
 - g. A land acquisition plan, project schedule and financing plan
 - h. Two current appraisals
 - i. The economic impact of the completed development
 - j. The economic feasibility of the project
 - k. A description of the employment conditions in the county
 - l. An analysis of the existing industrial land in the county and evidence of a shortage of suitable industrial sites
 - m. All expected State and county costs of the project
3. The completed application is submitted to DECD staff for review. The MILA subcommittee of the Department's Advisory Commission then makes the final decision.

If the loan is approved, settlement is quickly scheduled. Generally, a final decision on the completed application takes about six to eight weeks.

(2) Maryland Industrial Training Program

Objectives

To offer training and recruitment assistance to businesses just getting started, relocating from other states, or undergoing major expansion in Maryland.

Type of Assistance

The Maryland Industrial Training Program's (MITP) assistance covers the entire range of training experience including locating and/or training instructors, recruiting and screening workers, conducting job/task analysis, preparing training manuals and devising orientation programs. MITP assists the client company in developing a training plan, identifying training objectives, determining a budget and identifying responsibilities and time schedules. Training may take place in the classroom, on the job or a combination of both of these. On the job instruction may be used to update the client company's journeymen and foremen and train their employees to be more productive. In addition, to develop the skills the company needs, MITP can identify and locate the necessary instructors, training materials and training equipment.

Application Procedures

1. The interested company should first contact the Department of Economic and Community Development (DECD).
2. DECD will set up a mutually convenient meeting among itself, the interested company, and the State Coordinator for Industrial Training. At the meeting, the company discusses what skill areas it wants, training lead time, and the number of trainees needed. The funding requirements are also determined. From this information, MITP develops an abstract of the proposed program.
3. After the Maryland Industrial Training Coordinating Council has approved the company's proposed program, MITP draws up a contract detailing the obligations of the State, the local education agency, client company and any other involved parties. This agreement also delineates the overall training plan, including the number of trainees, skill areas and schedule. It includes a breakdown of funding, i.e., the State's and other contributions by line item.
4. The training program and in-house advisory board is set up and begins operation.

This entire procedure takes around 90 days from the time the company first notifies DECD to the time actual training is underway. The length of a particular trainee program is determined by the individual needs of the company. There are no set formulas; program representatives handle the paperwork.

b. Office of Minority Business Enterprise (OMBE)

Authorizing Legislation

State: Governor's Executive Order dated May 7, 1975

Federal: Executive Order 11625 dated October 13, 1971

Objectives

1. Development of State Procurement Opportunities
2. Development of Minority Business Information Office
3. Removal of impediments to minority entrepreneurship

Type of Assistance

Management and Technical Assistance
Business Education and Training

Eligible Applicants or Recipients

All minority business persons and potential business persons in the State of Maryland

Application Procedures

Written or verbal request for assistance to Maryland State OMBE

Matching Requirements if Applicable

Twenty-five percent State match of program funds

c. Office of Business Liaison

Program

The Office of Business Liaison (OBL) is charged with creating a more favorable business climate in Maryland to encourage resident business and industry to expand and create new job opportunities. OBL fulfills this objective by:

- Providing Maryland business people with a responsible focal point for receiving and answering questions on State programs;
- Providing current information on State government procedures;
- Directing the business community's suggestions, complaints, or criticisms about government activities relating to business to the proper channels for action and follow-up as appropriate;
- Arranging meetings between businessmen and government officials;
- Suggesting remedies for the causes of legitimate business complaints to the proper State agencies.

In other words, the office serves as Maryland's "ombudsman for business." Its role calls for direct interface with the private sector as a standard-bearer of Maryland's good will. Every resource of the Department of Economic and Community Development and other State agencies is brought to bear in order to enhance the relationships between industry and State government and assure the effective administration of State services.

Type of Assistance

Technical assistance and information.

Eligible Applicants or Recipients

Any organization formed to promote economic development or local unit of government may receive assistance as well as the private sector.

Application Procedures

No formal procedures. Information is available upon request.

d. Maryland Industrial Development Financing Authority

Administering Agency

Maryland Industrial Development Financing Authority
The World Trade Center
401 East Pratt Street, Suite 2244
Baltimore, Maryland 21202
301-659-4262

Authorizing Legislation

State: Chapter 714, Annotated Code of Maryland 1965

Objectives

To attract new business to Maryland, assist existing business in expanding, provide diversification of industry, increase employment, and provide a larger taxable base for the State's economy.

Type of Assistance

The Maryland Industrial Development Financing Authority (MIDFA) provides two types of assistance: first, it approves loans for tax exempt financing and second, it provides insurance on a portion of the loan. In effect, MIDFA enables borrowers to obtain loans at a higher percentage of project costs, at a lower interest rate, and for a longer term than is normally available from conventional sources. Loans insured or approved by MIDFA normally have tax exempt interest rates. Since the loans are channeled through the local government, the local government acts as the legal borrower and either lends the money directly to the company which owns the property or the local government itself takes title for the property, leasing it back to the firm. In either case, the firm makes payments equal to the debt service on the loan. Since tax exempt interest rates are usually lower than conventional rates, the participating company can obtain financing at a significantly lower cost. By Maryland law, the political subdivision is immune to potential loss and, by agreement, in each loan the lender and MIDFA agree on the allocation of the potential liability in the event of business failure or loan default.

To the extent needed, MIDFA insures mortgage loans to finance the construction, acquisition, and rehabilitation of commercial-industrial real estate and equipment. MIDFA is permitted to insure any portion of the loan up to 90 percent of the cost of land and building and up to 70 percent of the cost of machinery and equipment. The loan may be made up to 100 percent of eligible costs such as appraisals, legal expenses, architectural and engineering costs, etc.

Although MIDFA may insure 100 percent of a loan, its policy is to insure only that portion of the loan which the lender feels is necessary to bring the loan into conformity with standard lending practice. The authority does not insure loans for working capital purposes.

Eligible Applicants or Recipients

To qualify for assistance, businesses must meet eligibility criteria which include:

1. The borrower must be engaged in a business in one of the following categories:

- a. Manufacturing;
 - b. Warehousing of manufactured, agricultural or seafood products;
 - c. Research and development;
 - d. Certain tourist and convention facilities;
 - e. Mercantile, retail or service facilities that primarily serve out-of-state markets;
 - f. Corporate headquarters or regional offices;
 - g. Certain port improvements and public uses, privately-owned airport facilities; and
 - h. Gasohol.
2. Each loan must generate significant economic impact on the State and community where it is located.
 3. The financial condition of the company, as well as the value of collateral securing the loan must reflect an ability to pay the debt service.

Application Procedures

1. Interested businesses are asked to arrange a pre-application meeting with the MIDFA staff. The meeting allows the applicant to discuss considerations of eligibility, credit, and financing. Such a meeting usually includes MIDFA's Assistant Attorney General who advises where appropriate. Legal and financial advisors to the applicant are welcome to attend the pre-application meeting.
 2. A formal application and appropriate document must be submitted to the Authority.
 3. When the local government is involved, that particular county or city must express its intent to participate in the proposed transaction.
 4. MIDFA usually processes applications for decision within 30-40 days.
2. Division of Local and Regional Development
Administering Agency: Department of Economic and Community Development
 2525 Riva Road
 Annapolis, Maryland 21401

Authorizing Legislation

State: Article 41, Section 260

Federal: Economic Development Act of 1965

Objectives

The Division of Local and Regional Development works to assist local governments and regional organizations to develop and implement economic development programs. It assists local governments to obtain and utilize State and federal program resources in economic development and assists local governments to organize viable economic development organizations.

Type of Assistance

Direct technical assistance is provided to help recipients to: analyze and prioritize needs, plan programs, obtain funding, prepare proposals, and establish economic development committees.

Eligible Applicants or Recipients

Cities, towns, counties, regional organizations and economic development committees.

Program

This Division currently administers the Maryland Industrial and Commercial Redevelopment Fund as described below.

Authorizing Legislation

State: Article 41, Secs. 460-466 inclusive, 05.01.11

Objective

The Maryland Industrial and Commercial Redevelopment Fund (MICRF) was created to assist local jurisdictions in funding rehabilitation programs for older commercial and industrial areas.

Type of Assistance

MICRF funds can be used to pay for costs associated with the acquisition or redevelopment of commercial and industrial areas, as well as costs associated with administering the program. Funds from the program are to go into areas most in need of commercial and economic improvement and where the local funding capacity is limited.

These funds are viewed as "seed" monies to encourage federal, local and private funding for commercial and industrial development. Targeting and leveraging the MICRF funds permits the addressing of problem areas not now adequately receiving private and federal investments. It is designed to be a supplemental funding program which works with other State programs (i.e., Maryland Industrial Development Financing Authority (MIDFA), Maryland Industrial Land Act (MILA)). Therefore, it is expected that each jurisdiction will seek funds from private, federal, and local sources as well as other State programs before they come to MICRF.

MICRF funds can be used:

1. Directly by a political subdivision for eligible public improvements (activities ineligible for consideration include the construction or reconstruction of facilities to be used primarily for the general conduct of government or general education services).
2. As loans or grants by a political subdivision to private entities which have committed investment for a project.
3. As a guarantee fund for loans made by private lenders.
4. Technical assistance loans (with an equal cash match) up to \$5,000 for prescribed use by jurisdictions under 50,000 population.

MICRF will look to the local jurisdiction for the total loan repayment. A jurisdiction through a pledge of full faith and credit or, for Baltimore City a pledge of assets and revenues, assures repayment of a MICRF loan.

Limitations

1. Loans can not exceed \$3,000,000;
2. Grants and partial payback loans can not exceed \$2,000,000;
3. A county with its incorporated municipalities is limited to a maximum of 40 percent of the total available MICRF money;
4. A loan or grant may not exceed 90 percent of the non-federal, non-private share of the project costs; and
5. MICRF generally will not fund any pre-application activity necessary or attendant to the filing of the application (i.e., market feasibility, comprehensive planning, or fiscal analysis).

Eligible Applicants or Recipients

Any county or incorporated municipality within the State of Maryland may apply.

Application Procedures

1. A letter of intent to request MICRF money must be sent to: Executive Director, MICRF;
2. A pre-application conference will be held. The conference is held between the representatives of the local jurisdictions, the MICRF staff and members of the MICRF Technical Advisory Committee;
3. An application will be accepted during times specified by the program director;
4. Applications will be ranked according to economic and social benefits. Preference will be given to those projects having private, federal or local financial commitments;
5. Final approval will be given by the Board of Public Works upon recommendation from the Secretary of the Department of Economic and Community Development; and
6. MICRF initially is to be funded for \$8 million. The funding is to be provided by the selling of general obligation bonds in December 1980. Additional funding authorization of \$15 million will be sought by DECD for fiscal year 81. Accordingly, with this expectation, two application filing periods have been established for the months of October 1980 and April 1981.

B. Industrial Development Revenue Bonds

For Additional Information Contact

Department of Economic and Community Development
Division of Business and Industrial Development
1748 Forest Drive
Annapolis, Maryland 21401
(301) 269-3514

Authorizing Legislation

State: Article 41, Sections 266A through 266-I Annotated Code of Maryland

Purpose

The proceeds of these bond issues are used to help private firms build or buy facilities, including equipment, for industrial, warehouse, port, pollution control, and other uses. Since revenue bonds are exempt from federal and Maryland income tax, the interest rates on these

bonds are lower than conventional rates. Thus, financing costs to the company are substantially reduced. As a result, industrial revenue bonds provide a means to stimulate employment, business expansion, and enhances the State's ability to attract new businesses.

How Revenue Bonds Work

A cooperating local government in Maryland sells revenue bonds to finance a specific project for a specific company. In most cases, the local government loans the funds to the participating company, so that the company can own the specific project outright. However, the local government may choose to lease the facility to the firm or the firm may agree to buy the facility through installment payments.

The bond agreement makes provision for payment of the principal and interest on the revenue bonds by loan repayment, lease rental payments, or installment purchase payments, as the case may be. Also included are provisions for the payment of maintenance and operating expenses, and the payment of all relevant taxes.

If the participating company defaults, then the local government is not obligated to pay off the bonds under Maryland law.

Provision for Tax Exempt Status

Under Section 103 of the Internal Revenue Code, interest on industrial development bonds is exempt from federal income tax only if the bonds meet certain requirements. Basically, the requirements for tax-exemptions are:

1. The issuer must be a governmental body;
2. The proceeds must be used for the acquisition of land or depreciable property;
3. Either the amount of the issue must be \$1 million or less, or the total capital expenditures by the user in the political subdivision where the project is located during the six-year period beginning three years prior to the issue and ending three years after the issue must not exceed \$10 million.
Some types of projects such as pollution control and certain port facilities are exempt from the \$1 million and \$10 million limits; and
4. Limitations are imposed on the purchase of the bonds by a substantial user of the financed project.

It is important that no commitments to buy real estate or equipment be made prior to consulting the local government and bond counsel, or the tax-exempt status of the project may be jeopardized.

This explanation of the Code is considerably simplified. A company interested in tax-exempt financing should obtain expert advice at an early stage.

Application Procedures

Because of the operating demands of a particular industry and the requirements of a specialized bond market, the following steps are intended to provide a general guide:

1. The firm obtains bond counsel and goes to the local government.
2. The local government designates an individual or a small, knowledgeable coordinating committee. The person or committee will:
 - a. represent the community in conferences with the company, local governmental officials, bond counsel and underwriters,
 - b. be readily available, and
 - c. have ready access to the governing body.
3. In the event the revenue bonds are publicly placed, the company and the local government jointly determine the underwriter to be used. In most cases, the revenue bonds are privately placed with one or more lenders, thereby reducing or avoiding underwriting fees.
4. A preliminary agreement and letter of intent are drawn up, covering the financing plan and land options, fees, engineering studies, and related expenses in the event the transaction is not completed.
5. The local government passes an ordinance or resolution specifying the purpose, maximum interest, and the dollar amount of bonds to be issued.
6. After the execution of a binding preliminary agreement between the parties, the transaction is completed as agreed by the lenders, the company and its bond counsel.

C. Maryland Department of Transportation Programs

The Maryland Department of Transportation (DOT) funds its programs and projects from the Transportation Trust Fund and available federal aid. Recent trends in energy conservation and inflation have resulted in a decline in the growth of the Department's financial resources and a decrease in the purchasing power of those resources. This comes at a time when costs of commitments are increasing and demands are growing faster than tax revenues. Rail service assistance is only one of many demands which must compete with others for the available funds. Therefore, commitment by the Department to rail transportation programs will need to be constrained to reasonable levels.

Accordingly, the Department cannot commit itself to open-ended support of all rail branch lines subject to abandonment. It has instead, developed a process of evaluating lines to determine which are within its financial capabilities and which meet the overall transportation service needs in affected areas. The State Rail Plan and the Maryland Transportation Plan will be the primary mechanisms for accomplishing this, with the Consolidated Transportation Program (the Department's six-year capital and operating program) the process for implementing financial commitments.

Another source of funds available to the Department of Transportation are the Rail Property Acquisition Loans of 1980 and 1981. These laws authorize a State debt of \$10 million to assist with acquisition and rehabilitation of railroad facilities in the State. However, the usual and preferred State funding mechanism for the rail program is the Transportation Trust Fund.

The following are summaries of the programs available in the Department of Transportation which can be used to support rail service:

1. Maryland State Rail Plan

Administering Agencies

State Railroad Administration
Office of Administrator
P.O. Box 8755, BWI Airport
Baltimore, Maryland 21240
(301) 243-7210

Office of Transportation Planning
Maryland Department of Transportation
P.O. Box 8755, BWI Airport
Baltimore, Maryland 21240
(301) 787-7333

Authorizing Legislation

Created by executive order in July 1978.

Objective/Program

The Administration is to participate in the transportation systems planning process by developing and maintaining the State Rail Plan as an element of the Maryland Transportation Plan. The State Rail Plan is designed to provide an overview of all rail services in the State within the framework of the overall transportation system, so that the interrelationships between the various components of the State's transportation and rail systems may be understood. More specifically, the State Rail Plan is designed to set forth the rail policies, strategies, plans and programs of the State of Maryland. The State Rail Plan serves as a tool in analyzing and deciding the future course of action for the Department in supporting those facilities and services which are essential for the State's well being. It serves to monitor existing programs which the State is supporting, and to set priorities among existing programs for the limited available resources that exist for both current and future projects.

Type of Assistance

Provides detailed information concerning service and anticipated improvements on rail lines in Maryland. The planning process allows for public participation in all phases of plan and project development. State agencies and local jurisdictions are also given opportunities to have input during the plan development process.

2. Rail Property Acquisition Loan of 1980

Administering Agency: State Railroad Administration
Office of the Administrator
P.O. Box 8755, BWI Airport
Baltimore, Maryland 21240

Authorizing Legislation

House Bill 1949, 1980 Session.

Objective/Program

To create a State debt in the amount of \$5,000,000 to be used for the acquisition, improvement and rehabilitation of railway facilities within and outside the State. State general obligation bonds would be issued and sold to support the project. Lines specifically mentioned are:

1. Townsend, Delaware to Centreville, Queen Anne's County
2. Massey to Chestertown, Kent County
3. Clayton, Delaware to Easton, Talbot County
4. Queen Anne's to Denton, Caroline County
5. Seaford, Delaware to Cambridge, Dorchester County
6. Littlestown, Pennsylvania to Frederick City, Frederick County
7. Salisbury to Hebron, Wicomico County

Type of Assistance

Acquisition and rehabilitation of specified rail lines.

Eligible Applicants

Only those rail lines specified in the law. Terms and conditions of acquisition recommended by the Secretary of Transportation and the Board of Public Works.

Application Procedures

No application procedures.

III. LOCAL PROGRAMS

A. Non-Charter Counties and Municipalities - Article 66B

Article 66B, Section 3.01, confers overall power to enact a comprehensive plan guiding private and public actions to insure proper development of land within the subject jurisdictions. This, along with other sections (see below) implicitly allows use of the police powers to protect and enhance rail service. These powers include planning, zoning and economic development strategies.

- (1) Section 3.05 - Requires that plans include land use elements specifying the most appropriate location of land uses including transportation and industry, and that critical areas be identified by subject jurisdictions.

Also to be included is a statement of goals and objectives to serve as a guide for the development and economic well being of the jurisdiction. There must be a specific transportation plan element which details the location, pattern, character and extent of routes and terminals for railways as well as other transportation modes.

- (2) Section 3.06 - States that the plans should be made with the general purpose of "guiding and accomplishing the coordinated, adjusted and harmonious development of the jurisdiction." Preservation and management of railroads can logically be considered essential to sound economic and physical growth and development of a jurisdiction.
- (3) Section 4.01 - Delegates the overall power of zoning and the right to impose additional restrictions deemed appropriate to preserve, improve or protect the general character of the land being zoned or rezoned.

- (4) Section 4.02 - Authorizes the creation of zoning districts to regulate the types of development which can occur in various locations throughout the jurisdiction.
- (5) Section 4.03 - States that one of the purposes of zoning regulations is the adequate provision of transportation and other public facilities.

B. Charter Counties of Maryland - Article 25A

Article 25A, Section 5, enumerates the powers of charter counties. The powers and responsibilities which have potential applicability to rail line management are:

- (1) To conduct planning and zoning activities.
- (2) To purchase and hold property for any public purpose.
- (3) To enact local laws for the protection and promotion of the welfare of the jurisdiction.

C. The Maryland-National Capital Park and Planning Commission - Article 66D

This article enables the Commission to conduct planning activities for the Maryland-Washington Regional District, comprising parts of Montgomery and Prince George's Counties. Specific powers which could be used in enhancing the use of railroads are:

- (1) Section 5-116, title "Recommendations as to Transportation Services and Facilities", states that:

The Commission may investigate and report with recommendations to the General Assembly of Maryland as to transportation service and facilities within the metropolitan district and the coordination thereof upon the highways, roads, bridges, railroads, street railways, and other arteries of traffic; the manner of effecting the relationship; and what improvements and new facilities should be provided for a comprehensive and coordinated development of transportation for the metropolitan district; and submit to the General Assembly from time to time any other recommendations respecting legislation which the Commission, as a result of its activities, regards as to the best interests of the metropolitan district. (1975, ch. 892)

- (2) Section 7-108 states that the general plan may be based on studies and the consideration of such elements, factors, and conditions as the following:

- (a) Existing and forecasted amount, type, intensity, general location, and characteristics of commercial, industrial, and public sector facilities, and employment related thereto.
- (b) Existing and forecasted type, amount, need and location of major public services, facilities, and utilities.
- (c) Existing and forecasted transportation needs, facilities, routes, and systems.

These three articles provide basic power to the respective local jurisdictions - both county and municipal - for planning and zoning. The power to enact measures for protecting and enhancing railroads evolves implicitly from these enabling articles and various clarifying subsections which lend detail to the overall planning and zoning authority.

IV. FEDERAL PROGRAMS

In addition to the funding programs offered by the State, the federal government maintains programs with funds available for rail-related projects. These programs are:

A. Railroad Branchline Rehabilitation Program

The Local Rail Service Assistance Act was passed in 1978. It strengthens the Federal Railroad Administration's Local Rail Service Assistance Program by providing for the limited continuation of service on eligible abandoned rail lines and by providing capital for the rehabilitation of potentially viable lines. In support of this legislation, an agreement has been executed by the Federal Railroad Administration (FRA), the Farmer's Home Administration (FmHA), and the Economic Development Administration (EDA). Under the agreement, assistance through FmHA's rural development loan programs will be available to states which own rail corridors for railroad-related projects to supplement FRA resources. EDA has agreed to make public works grants and loans for capital improvements in cases where such railroad and rail shipper facilities:

- 1. Will support or complement vital industrial or commercial facilities in areas defined by EDA as economically distressed;
- 2. Will retain or create a significant number of jobs and raise income levels; and
- 3. Are specifically identified by the area as a high-priority within its overall economic development program or comprehensive economic development strategies.

The agreement will permit the participating agencies to increase funding for rail-related projects in a coordinated and efficient manner.

B. Small Business Administration (SBA) Programs

The SBA makes loans to stimulate small business and to promote minority enterprise opportunities. There are three categories of loans available:

1. Section 7 (a) Regular Business Loans - are provided directly to firms which qualify and have a reasonable ability to repay the loan;
2. Section 501 and 502 State and Local Development Company Loans - financial assistance is provided to qualifying firms through state and local development companies in the form of direct loans and guaranteed loans; and
3. Section 301 (d) Small Business Investment Companies and Minority Enterprise Small Business Investment Companies - provide equity capital and long-term loans to small businesses and socially disadvantaged enterprises.

C. Public Works and Economic Development - EDA Section 304

The U. S. Department of Commerce through the Economic Development Administration assists the construction of public facilities needed to initiate and encourage long-term economic growth in designated geographic areas where economic growth is lagging behind the rest of the nation. Loans are provided to businesses and development companies. Planning assistance, technical assistance, grants and loans are provided for such public facilities as water and sewer systems, access roads to industrial parks or areas, port facilities, railroad sidings and spurs, public tourism facilities, vocational schools, flood control programs, and site improvements for industrial parks. Proposed projects must be consistent with the currently approved overall economic development program for the area.

The Maryland Department of Economic and Community Development can provide additional information on the above federal economic development programs.

V. PRIVATE PROGRAMS

Administering Agency
Development Credit Corporation of Maryland
Suite 211, Lafayette Building
40 West Chesapeake Avenue
Towson, Maryland 21204
(301) 828-4711

Authorizing Legislation

Article 23, Sections 412 or 429 inclusive, Annotated Code of Maryland.
/1971 Replacement Volume/ Revised December, 1977.

Objective

The Development Credit Corporation of Maryland (DCCM) was established for the purpose of stimulating business and industry in the State of Maryland by making loans when and to the extent such loans are not otherwise readily available due to policy or legal restrictions.

Type of Assistance

DCCM may make loans to any business or industrial enterprise unable to obtain funds from banks or conventional lenders. It is a private development bank which gets its loan funds from private as well as government sources. With private capital as a base, it obtains funds to make loans to small businesses from its member banks in Maryland and from the Small Business Administration under a special provision which permits SBA to lend to development companies operating statewide.

DCCM makes loans with terms of five to fifteen years ranging from \$25,000 to as high as \$650,000 when direct bank participations can be achieved. The loans are for the acquisition of equipment, plant construction and working capital or combinations of these. DCCM is authorized to charge interest on loans at a rate of not more than 4½% in excess of the prime rate prevailing in the City of Baltimore on unsecured commercial loans. The interest rate on the loan depends on a number of considerations, including the company making the application, the degree of risk and the management capabilities of the company.

Eligible Applicants or Recipients

DCCM is not a venture capital firm. Loan applications for totally new and untried ventures are not encouraged, nor are loans whose sole purpose is to refinance existing debt. DCCM prefers to lend to fledgling companies where some evidence of managerial ability to operate profitably already exists. The bank also prefers to make loans to companies where significant payrolls will be created, increased, or preserved as a consequence of the loan.

Application Procedures

1. DCCM will receive applications directly from prospective applicants and will confer with them about their inquiry; however, DCCM prefers applications which come to it with the advice and consent of the applicant's bank of account.
2. DCCM will make contact with the applicant's bank of account and the bank's position with respect to the application, will be determined. Ideally, the bank of account will sponsor an appli-

cation to DCCM and the bank probably will be willing to purchase a direct early maturity participation in the requested loan to a token amount as evidence of the bank's support of the application.

3. Material submitted by the applicant to DCCM is first reviewed by DCCM's staff which then reviews it with a Regional Loan Committee.
4. The Regional Loan Committee then makes a recommendation to the Executive Committee, which decides whether or not to approve the application.
5. Approved applications are placed with law firms acceptable to DCCM, which then prepare the necessary legal documents to close the loan. All legal expenses are borne by the applicant.

A nominal management consulting fee is also charged, but only in the event that a loan is actually disbursed to an applicant.

Appendix C

APPENDIX C: WETLAND CRITICAL AREAS - WETLAND AND WATER QUALITY CLASSIFICATION

SITE #	SITE	COUNTY(IES)	TYPE	WETLAND CLASS*	STATE WATER QUALITY STANDARDS CLASS
TN 1	Severn Run Tributaries	Anne Arundel	a. Tidal	Estuarine Emergent Wetland Saltmarsh Cordgrass Cattail Estuarine Scrub-Shrub Wetland Rose/Alder	a. Class I - Water Contact Recreation
			b. Non-Tidal	Palustrine Scrub-Shrub Wetland Viburnum/Alder Palustrine Forested Wetland Red Maple/River Birch	b. Class IV - Recreational Trout except Jabez Branch which is Class III - Natural Trout
C-1 TN 2	Jug Bay	Anne Arundel & Prince George's	a. Tidal	Palustrine Emergent Wetland Cattail Phragmites (Reed-grass) Hibiscus/Cattail Palustrine Aquatic Bed Spadderdock (Nuphar) Palustrine Emergent Wetland Wildrice Palustrine Scrub-Shrub Wetland Red Maple/Rosa (Swamp Rose)	a. Class I - Water Contact Recreation

* Prepared by Wayne Klockner of the Wetlands Division of the Water Resources Administration, using "Classification of Wetlands and Deepwater Habitats of the United States" by the Fish and Wildlife Service, U.S.D.I., December 1979, Publication FWS/OBS-79/31.

APPENDIX C: WETLAND CRITICAL AREAS - WETLAND AND WATER QUALITY CLASSIFICATION

SITE #	SITE	COUNTY(IES)	TYPE	WETLAND CLASS	STATE WATER QUALITY STANDARDS CLASS
TN 3	Eagle Hill Bog	Anne Arundel	b. Non-Tidal	Two Run Branch Palustrine Forested Wetland Green Ash/Red Maple/ Box Elder	b. Class I - Water Contact Recreation
				Charles Branch Palustrine Forested Palustrine Shrub Swamp	
				Western Branch Palustrine Forested Palustrine Shrub Swamp Palustrine Emergent	
TN 3	Eagle Hill Bog	Anne Arundel	a. Tidal	Estuarine Emergent Wetland Saltmarsh Cordgrass	a. Class II - Shellfish Harvesting
			b. Non-Tidal (Gray's Bog)	Palustrine Scrub-Shrub Wetland Red Maple/Leatherleaf Palustrine Forested Wetland Red Maple	b. Class I - Water Contact Recreation
			(Eagle Hill Bog) Perimeter	Palustrine Emergent Wetland Sedge (Rhynchospora) Palustrine Scrub-Shrub Wetland Leatherleaf/Cranberry	
TN 4	South River Headquarters	Anne Arundel	a. Tidal	Estuarine Emergent Phragmites (Reed-grass) Cattail/Cordgrass Cattail/Hibiscus	a. Class I - Water Contact Recreation

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SITE #	SITE	COUNTY(IES)	TYPE	WETLAND CLASS	STATE WATER QUALITY STANDARDS CLASS
				Palustrine Scrub-Shrub Wetland Rosa/Hibiscus	
			b. Non-Tidal	Palustrine Forested Wetland Red Maple/River Birch	b. Class I - Water Contact Recreation
				Palustrine Scrub-Shrub Wetland Red Maple/Alder	
TN 5	Round Bay Bog	Anne Arundel	a. Tidal	Estuarine Emergent Wetland Cattail	a. Class II - Shellfish Harvesting
			b. Non-Tidal	Palustrine Scrub-Shrub Wetland Red Maple/Sweet Pepperbush	b. Class I - Water Contact Recreation
				Palustrine Moss-Lichen Wetland Sphagnum Moss	
TN 6	Gunpowder Delta Marsh/Day's Cove	Harford and Baltimore	a. Tidal	Estuarine Emergent Wetland Cattail/Pickeralweed/Arrow Arum	a. Class I - Water Contact Recreation and Class II - Shellfish Harvesting
			b. Non-Tidal	Palustrine Scrub-Shrub Wetland Willow	b. Class I - Water Contact Recreation
				Palustrine Emergent Wetland Cattail/Arrow Arum	
TN 7	Zekiah Swamp	Charles and Prince George's	a. Tidal	Estuarine Emergent Wetland 3-square/Big Cordgrass	a. Class I - Water Contact Recreation and Class II - Shellfish Harvesting
			b. Non-Tidal	Palustrine Forested Wetland Pin Oak/Sweet Gum/Green Ash	b. Class I - Water Contact Recreation and Class II - Shellfish Harvesting
				Palustrine Scrub-Shrub Wetland Willow/Alder	

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SITE #	SITE	COUNTY(IES)	TYPE	WETLAND CLASS	STATE WATER QUALITY STANDARDS CLASS
TN 8	Mattawoman Creek	Charles and Prince George's	a. Tidal	Palustrine Forested Wetland Green Ash/ Red Maple Palustrine Aquatic Bed-Lotus	a. Class I - Water Contact Recreation
			b. Non-Tidal	Palustrine Forested Wetland Green Ash/ Sweet Gum	b. Class I - Water Contact Recreation
TN 9	Big Marsh/Howell Point	Kent	a. Tidal	Limit Approx. 3000' SE from Bay Shoreline	a. Class II - Shellfish Harvesting
			b. Non-Tidal	Palustrine Scrub-Shrub Wetland Red Maple Palustrine Emergent Wetland Cattail/ Lizards Tail Palustrine Aquatic Bed Fragrant White Water Lily	b. Class I - Water Contact Recreation
TN 10	Broad/Henson Creek	Prince George's	a. Tidal	Palustrine Emergent Wetland Cattail/ Smartweeds Palustrine Aquatic Bed Wetland Spradder-dock Palustrine Scrub-Shrub Wetland Alder/Willow	a. Class I - Water Contact Recreation
			b. Non-Tidal	Palustrine Forested Wetland Red Maple/ Green Ash	b. Class I - Water Contact Recreation
TN 11	Piscataway Creek	Prince George's	a. Tidal	Palustrine Emergent Wetland Smartweeds/ Wildrice Palustrine Aquatic Bed Wetland Spradder-dock Palustrine Scrub-Shrub Wetland Alder/Willow	a. Class I - Water Contact Recreation

APPENDIX C: WETLAND CRITICAL AREAS - WETLAND AND WATER QUALITY CLASSIFICATION

SITE #	SITE	COUNTY(IES)	TYPE	WETLAND CLASS	STATE WATER QUALITY STANDARDS CLASS
			b. Non-Tidal	Palustrine Forested Wetland Green Ash/Sycamore	b. Class I - Water Contact Recreation
TN 12	Chaptico Run	St. Mary's	a. Tidal	Estuarine Emergent Wetland Big Cordgrass/3-square	a. Class I - Water Contact Recreation and Class II - Shellfish Harvesting
			b. Non-Tidal	Palustrine Scrub-Shrub Wetland River Birch/Willow	b. Class I - Water Contact Recreation
TN 13	Killpeck/Trent Hall Creeks	St. Mary's	a. Tidal	Estuarine Emergent Wetland Big Cordgrass/Cattail/3-square Saltmeadow Cordgrass	a. Class I - Water Contact Recreation and Class II - Shellfish Harvesting
			b. Non-Tidal	Palustrine Forested Wetland	b. Class I - Water Contact Recreation
TN 14	Pocomoke River	Somerset, Worcester & Wicomico	a. Tidal/ Non-Tidal	Palustrine Forested Wetland Bald Cypress/Black Gum/Red Maple	a. Class I - Water Contact Recreation
T 15	Sullivan's Cove Marsh	Anne Arundel	a. Tidal	Estuarine Emergent Wetland Saltmarsh Cordgrass Estuarine Scrub-Shrub Wetland Marsh Elder Palustrine Wooded Swamp Red Maple/At. White Cedar Palustrine Aquatic Bed White Water Lily	a. Class II - Shellfish Harvesting

APPENDIX C: WETLAND CRITICAL AREAS - WETLAND AND WATER QUALITY CLASSIFICATION

SITE #	SITE	COUNTY(IES)	TYPE	WETLAND CLASS	STATE WATER QUALITY STANDARDS CLASS
T 16	Deep Pond/Beverly Beach	Anne Arundel	a. Tidal	Estuarine Emergent Wetland Saltmarsh Cordgrass Saltmeadow Cordgrass Estuarine Scrub-Shrub Wetland Marsh Elder/ Groundsel Bush	a. Class II - Shell- fish Harvesting
T 17	Black Marsh	Baltimore	a. Tidal	Estuarine Emergent Wetland 3-square/ Hibiscus	a. Class II - Shell- fish Harvesting
T 18	Bush Creek Marsh	Harford	a. Tidal	Estuarine Emergent Wetland Pickerel- weed/Arrow Arum Palustrine Emergent Wetland Cattail	a. Class I - Water Contact Recreation
T 19	Church Creek Marsh	Harford	a. Tidal	Estuarine Emergent Wetland Cattail/ Pickerelweed/ Arrow Arum	a. Class I - Water Contact Recreation
T 20	Otter Point Creek Marsh	Harford	a. Tidal	Estuarine Emergent Wetland Cattail/ Pickerelweed/Arrow Arum/Wildrice Palustrine Emergent Wetland Sweetflag	a. Class I - Water Contact Recreation
T 21	Swan Creek Marsh	Harford	a. Tidal	Estuarine Emergent Wetland Cattail/ Smartweeds/Arrow Arum/Wildrice	a. Class I - Water Contact Recreation and Class II - Shell- fish Harvesting

APPENDIX C: WETLAND CRITICAL AREAS - WETLAND AND WATER QUALITY CLASSIFICATION

SITE #	SITE	COUNTY(IES)	TYPE	WETLAND CLASS	STATE WATER QUALITY STANDARDS CLASS
N 15	Fresh Pond/Angel's Bog	Anne Arundel	a. Non-Tidal	Palustrine Open Water Palustrine Emergent/ Scrub-Shrub Wetland Grasses/Rushes/Red Maple-Leatherleaf	a. Class I - Water Contact Recreation
N 16	Battle Creek Cypress Swamp	Calvert	a. Non-Tidal	Palustrine Forested Wetland Bald Cypress/Red Maple	a. Class I - Water Contact Recreation
N 17	Finzel (Cranberry) Swamp	Garrett	a. Non-Tidal	Palustrine Scrub- Shrub Wetland Alder/Arrowwood	a. Class III - Natural Trout
N 18	Potomac Shoreline Marshes	Montgomery	a. Non-Tidal	Palustrine Forested Wetland Green Ash/ Red Maple Palustrine Scrub- Shrub Wetland Button- bush/Hibiscus (Marsh- mallow) Palustrine Emergent Wetland Arrow Arum/ Spadderdock	a. Class I - Water Contact Recreation
N 19	Suitland Bog	Prince George's	a. Non-Tidal	Palustrine Forested Wetland Red Maple/ Sweetbay Magnolia	a. Class I - Water Contact Recreation